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ABSTRACT

Several different provincial agencies in Alberta, Canada, cooperated in initiating a safety education project that was piloted in the County of St. Paul. The project tested the feasibility of integrating safety into the general curriculum; the usefulness of existing safety resources from different agencies; and a diagnostic approach to health education that was based on an assessment of students' skills, knowledge, attitudes, and values. During the project, two sets of inservice sessions were held for teachers in St. Paul. In addition, seven safety units, one topic for each grade from early childhood services to grade 6, were designed by elementary school teachers using L. W. Green's model of health education. Recommendations resulting from the project included calls for further revisions of the seven units by specialists in attitude change in order to make the attitude component of the units more specific, for additional field testing of the revised units, for the provision of teacher training in the area of safety education, and for the provision of instruction on safety education in chosen careers. (MN)

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STUDENT SAFETY EDUCATION
PROJECT

- by -

Wendy Gould, Project Coordinator
and
Kerrie Pain, Evaluator

Under contract to County of St. Paul
Partially Funded by Alberta Education

December 1982

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STUDENT SAFETY EDUCATION PROJECT

PROJECT DESCRIPTION

COORDINATORS REPORT

SAFETY UNITS

BY

WENDY GOULD

FOR

THE COUNTY OF ST. PAUL

AND THE

PROJECT'S INTERDEPARTMENTAL STEERING COMMITTEE

DECEMBER 1982

VOLUME I

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Foreword

Think about a society that is composed of informed responsible citizens. A society where individuals take responsibility for themselves and who value and respect life. Individuals who also understand their need for each other and that interdependency is a part of our life. What would such a society look like? It would be one in which the members of the society have reached, in Maslow's hierarchy of needs, the level of love and affection and in many cases self actualization. Their basic needs for food and shelter have been met and their needs for safety and security go without question. It is a society where people are aware of their choices and are able to act on them responsibly.

In a future society such as this, individuals would not take risks without seriously considering the consequences. Based on information, people would take calculated or carefully thought out risks. This would be done partly because of the value and respect that is placed on the life of oneself and others. People would recognize the value of safety features as preventative measures. Industry would automatically produce goods as safely as possible without needing legislation. All members of this society would take direct action in correcting unsafe situations.

What has this got to do with safety education? Before a safety education plan can be effectively designed, consideration must be given to the future. As John McHale in the Future of the Future states "TO DECIDE ON A PREFERRED FUTURE: TO IMAGINE WHAT WE WANT, THEN FROM THAT REFERENCE POINT, WORK BACKWARDS TOWARD THE PRESENT AND MOVE TOWARD THE FUTURE OF THE FUTURE WE ENVISION!" If we want a society that does not have the thousands of people being maimed and killed on our highways or suffering from other types of accidents as we have now, we need to think about what changes will have to occur in our present way of functioning and thinking to make that come about. We need to look at our present values both conscious and unconscious. Values such as a society which provides freedom of choice. What does this mean? Does this mean that we have the choice to do as we please and not consider the repercussion it has on the rest of society? Does it mean we have the choice to maim and kill ourselves without thought of the costs, both financial and emotional, to other members of our family or society? Or does it mean we have the freedom to choose how we want to function in a responsible manner in our society?

Our present society perceives growth, expansion and speed as very positive forces. There are negative sides to these forces that also need to be considered. The pressure for growth and expansion causes a great deal of competition and stress. Many accidents are caused by people who are stressed, tired and in a hurry; pushing to make time without consideration of the consequences. What implication do these values and forces have on our future? Can these values be changed? How can we aim towards a preferred future society? Who is responsible for making this society come about? And who is to decide which society we want?

Any future design of safety education should include a consideration of a preferred future with a reflection on what the future society would be like, what its conscious and unconscious values would be, how it would differ from the present society and what the driving forces are within the present society which will inhibit growth towards a preferred future. This Safety Education Project identified some of the attitudes and factors which are believed to affect safe behavior with an attempt to effect some change. Much more work still needs to be done. The information from this report is an example of a group of people striving to make some changes in this society. The ideas contained here need to be expanded upon keeping a preferred future in mind. A change in society will take time, commitment, wisdom and a willingness to keep trying. Ultimately it is a responsibility of every member of this society.

Wendy Gould
Coordinator
Student Safety Education Project

ABSTRACT

Several different provincial agencies co-operated in initiating a safety education project, which was piloted in the County of St. Paul. The project represented a group of people who were prepared to break new ground in an attempt to effect change for the future. The aim of the project was "TO INCREASE STUDENT KNOWLEDGE AND INFLUENCE THE DEVELOPMENT OF POSITIVE SAFETY ATTITUDES AND BEHAVIOR."

The project tested the feasibility of integrating safety into the general curriculum, the usefulness of existing safety resources from different agencies and a diagnostic approach to health education based on an assessment of students' skill, knowledge, attitudes and values. Seven safety units, one topic for each grade from Early Childhood Services to Grade Six, were designed by elementary school teachers using L.W. Green's (1980) model of health education. The design of the units attempted to affect attitudes and change knowledge. For a detailed description and report on the results see Dr. Kerrie Pain's Evaluation Report for this project.

This project provides a model for other school jurisdictions who are interested in developing local curriculum, safety policies and procedures and education programs. It also provides an example for safety education. It is hoped that the information will be used by others who will be able to expand and elaborate on what was started by this project.

SUMMARY REPORT

This project was initiated in the fall of 1979 by the Canadian Petroleum Association and funded cooperatively by seven different agencies. It was piloted in the County of St. Paul School Division. The project was in response to the high death and injury rate among young people attributed to accidents. The project ultimately consisted of designing seven safety units to be integrated into the school curriculum from Early Childhood Services to grade six. The aim of the project was "TO INCREASE STUDENT KNOWLEDGE AND INFLUENCE THE DEVELOPMENT OF POSITIVE SAFETY ATTITUDES AND BEHAVIOR." The units were designed by teachers in the County of St. Paul utilizing existing resources and basing the design on Green's Health Education Diagnostic Approach.

An interdepartmental committee was set up to fund and advise the project. To implement the project a coordinator and a designer were contracted. A Teacher Steering Committee was set up to guide the project locally. Seven sub committees, composed of teachers, were set up to design the safety units.

The initial project was to implement a Reach for Safety competitive program for high school students similar to the school program, Reach For The Top. It was decided after the first year of the project that a safety instructional program needed to be implemented first. A manual from Grey County in Ontario called Operation Safety Program was obtained and recommended as a source for information on general safety topics. Changes were made in the resource to make it suitable to Alberta. This resource is now available through the Department of Education under the title of Ideas On Safety Education/Teacher Resource Guide.

Two sets of inservices were held for the teachers in St. Paul. It was hoped that the information which was provided at these inservices would assist the teachers in instructing safety education by utilizing Green's approach. After the inservices it was apparent that the teachers would not be able to change their instruction on safety without further assistance. The Teacher Steering Committee decided that design work on safety units would be done by two teachers per grade form Early Childhood Services to Grade Six. Seven units were designed and taught by teachers. The results of the design work indicate clearly that local curriculum design can be a challenging and valuable process.

Any local curriculum design must ensure that all those affected are involved and informed right from the onset. Adequate funding needs to be obtained and ample time provided for design, teaching, testing and revisions. It was found to be difficult to affect attitudes and to write behavioral objectives specific to attitude change. Assistance needs to be provided to the design teachers before and during the design work. It should include an aspect on affecting attitudes and behavior.

RECOMMENDATIONS

These are broken down into two areas. First those recommendations which reflect the safety project in the County of St. Paul and secondly those arising from the research work of the project coordinator.

1. Project Recommendations

   a. This instructional method appears to hold promise for increasing knowledge and perhaps changing attitudes. Further research is needed to increase our understanding of the processes involved.

   b. It is recommended that units be further revised by specialists in attitude change to make the attitude component of the units more specific and incorporate additional techniques.

   c. It is recommended that the revised units receive a further field test in a different school system to see if more teaching time and/or more specific teaching can increase attitude changes.

   d. The safety attitude test developed for use in this study appears to be a viable instrument. Further analysis and revision of the test is recommended, particularly since there appears to be a strong need for a test of safety attitudes in related types of research.

   e. A Comprehensive Safety Education plan should be devised to cover the home, the school, the community and the worksite.

   f. Teachers should be given assistance in how to teach safety.

   g. Alberta Education should:

      i) Consider integrating safety education into the curriculum;

      ii) Provide guidance to teachers through in-service on how to more effectively teach safety;

      iii) Create a full time Health and Safety Consultant.

   h. Workers' Health, Safety and Compensation should:

      i) Respond to the needs of Industrial Arts Teachers;

      ii) Undertake research into safety attitudes;

      iii) Investigate the effects of off the job site accidents.

2. Coordinator's Recommendations

a. A comprehensive accident surveillance system such as the one in Britain should be instituted.

b. Alberta Advanced Education and Manpower should:

   i) Negotiate for the provision of teacher training in the area of safety education;

   ii) Negotiate for the provision of instruction on safety education in chosen careers.

c. Alberta Transportation should:

   i) Promote the safer design of vehicles;

   ii) Make driver education more accessible to all schools.

d. Alberta Social Services and Community Health should participate in setting up a communication network to provide safety resources to the community.

e. Alberta Safety Council should provide stronger leadership in coordinating safety education within the Province.

f. Canadian Petroleum Association and other industries should provide staff safety training which includes both on the job and leisure time safety.

ACKNOWLEDGEMENTS

Without the initiative of the Canadian Petroleum Association, approval by the Department of Education and Ministry of Workers' Health, Safety and Compensation, financial assistance from the Interdepartmental Steering Committee, foresight of the County of St. Paul Board of Education, commitment of the Superintendent and principals and the willingness of the teachers in the County of St. Paul to design and test safety units, the project would not have happened. A few need to be singled out for their major contribution to the project.

A very special thanks is extended to Bill Webb, Superintendent of the County of St. Paul Schools, for his dedication and flexibility in responding to the needs of the project.

To Dr. Kerrie Pain, a thank you for her assistance in the role of evaluator to the project.

To Ellie Robson, for her searching questions and commitment to the project while part of the staff and her moral support and sage advice after leaving the project, a warm thank you is extended.

To the Design and Steering Committee teachers, grateful appreciation is extended for their creative and professional work.

Appreciation for the very difficult task of typing the Safety Units and the final report is expressed to Margaret Benoit and Francesca Leung.

A very sincere thank you is extended to Simone Gareau for her willing role of typing and coordinating resources as they arrived in the County Office, and for making many phone calls to arrange meetings.

Because of all the participants contributions, the people of Alberta now have a model for safety procedures and safety education programs in the schools to use as a guide for other local endeavors.

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PART I PURPOSE AND PROCESS

A. INTRODUCTION

The project was initiated because of a concern about the high death and injury rate caused by accidents. The aim of the project was "TO INCREASE STUDENT KNOWLEDGE AND INFLUENCE THE DEVELOPMENT OF POSITIVE SAFETY ATTITUDES AND BEHAVIOR." Other school jurisdictions can use it as a model for local curriculum design, safety policies and procedures and safety education programs. The information contained in this report should be used as a concept or a model with broad implications rather than a package to be followed exactly.

B. OVERVIEW

Phase One

The Student Safety Education Project was initiated by the Canadian Petroleum Association in the fall of 1979, when the Association sent a letter to the Minister of Education, the Honorable David King and the Minister Responsible for Workers' Health, Safety and Compensation, the Honorable Bill Diachuk. The letter expressed the Association's concern about the high rate of accidents experienced by young workers and suggested that the government should consider implementing an Ontario based program, Reach for Safety, in response to the problem. The Reach for Safety program is organized and funded by the Industrial Accident Prevention Association in Ontario. Vocational high school students participate in the program which is similar in concept to the academically - oriented Reach for the Top program.

The two Ministers approved of the concept in principle. A committee consisting of representatives from Alberta Education, Alberta Workers' Health, Safety and Compensation and the Canadian Petroleum Association was formed to consider the Reach for Safety program. The Committee decided after studying the proposal that a pilot study should be undertaken to test the concept. The County of St. Paul School Division agreed to participate in a safety education project if the proposal were expanded to include primary students and an instructional program. The project changed direction in the fall of 1980 from a competitive program to one which included classroom instruction from Early Childhood Services to Grade Twelve.

One of the first actions the County of St. Paul School Division instituted after agreeing to participate was to set up school safety committees with the help of Workers' Health, Safety and Compensation. The purpose of these committees was to ensure the safety of staff and students within the school and to assist in the development of an educational program.

A manual from Grey County in Ontario, called Operation Safety Program, was obtained and recommended as a resource on general safety topics. However, changes needed to be made to the resource information to make it applicable to Alberta. In November, 1980, the Alberta Education Adhoc School Safety Committee approved in principle the participation of the Alberta Safety Council in revising the Grey County material, to adapt it for use in all grades, Early Childhood Services to Grade Twelve, and further, that this committee would review the completed document to ensure congruence with the Alberta Education Policy and Programs. After many drafts, the manual is now available from the Department of Education under the new name of Ideas on Safety Education/Teacher Resource Guide.

Phase Two

A Coordinator was contracted in January, 1981 by Workers' Health, Safety and Compensation for three months. Her job was to assist in intergrating safety instruction into the curriculum from Early Childhood Services to Grade Twelve utilizing the Grey County manual and to coordinate the competitive Reach for Safety program.

The membership on the Interdepartmental Steering Committee expanded to include the Alberta Safety Council and later the Departments of Social Services and Community Health and Transportation. All of the member agencies on the committee agreed to contribute at least $5,000.00 each to the budget of the project.

In April, the coordinator was contracted for another three months, again by Workers' Health, Safety and Compensation. A designer was contracted by the Alberta Safety Council to do design work and writing for the project. Subsequently the project staff were contracted by the Department of Social Services and Community Health, Workers' Health, Safety and Compensation, Education and Transportation through to December, 1981.

In the spring of 1982, the coordinator attended the First National Conference on Child Accidents and Prevention. The keynote speakers clearly indicated that providing facts regarding safety to children was not enough. Innovative educational means need to be developed to have a more positive effect on safety behavior. After the coordinator and designer reviewed the resources being used for the project, it was decided that another approach was needed.

The approach that was chosen was a learning model by L.W. Green called Health Education Planning: A Diagnostic Approach. It was selected because of two distinctive features. Firstly, the model focuses on safety attitudes and the elements which affect them. Secondly, it suggests the administration of a pre-teaching assessment to evaluate the students' knowledge and attitudes before instruction. This enables the teacher to respond to the specific needs of the students.

To help the project staff more clearly understand what was presently being instructed and to evaluate whether to continue with the competitive part of the program, a questionnaire was administered to the teachers. It assessed what safety topics and how much safety was already being taught, what safety resources were being used and how the teachers felt about using a competitive program as a teaching method. As a result of the questionnaire, the Reach for Safety program was set aside for a while and the focus was placed on an instructional program based on Green's diagnostic approach.

Two sets of inservices with the teachers were held, one in the spring and one in the fall of 1981. The purpose of these in services was to provide the teachers with safety resources and information on Green's approach to safety education to be utilized in integrating safety into the classroom. The hope was that the added infomation would complement what the teachers were already instructing on safety.

The County of St. Paul applied for a grant from the Occupational Health and Safety Heritage Grant Program for $10,000.00. This request was approved under the provision that a more formal evaluation of the project was to be carried out. Alberta Labor, which is represented on the Occupational Health and Safety Grant Steering Committee, was requested to become a member of the project Interdepartmental Steering Committee and to help oversee the evaluation. In the fall of 1981, an evaluation proposal was submitted to the Department of Education by the County of St. Paul for funding to conduct an evaluation. Approval was granted and approximately $17,000.00 was received for the evaluation study.

Phase Three

After the inservices it became apparent that the project lacked sufficient direction that the existing resources were not sufficient. A Teacher Steering Committee was set up in the fall of 1981 to guide the project locally. It was decided that curriculum needed to be designed. The County of St. Paul School Division allocated time for the teachers to assist in the design of teaching units. The project finally grew and matured into an educational program which attempted to:

a) Integrate safety into the general curriculum in elementary schools and identify and recommend where safety could be integrated into specific areas in secondary schools;

b) Coordinate the use of safety resources from different agencies and government departments;

c) Experiment with a new approach to safety education using Green's diagnostic approach to learning.

The project brought together a wide range of government departments and agencies involved in safety. Other agencies besides the Interdepartmental Steering Committee, which assisted by providing their resources to the teachers in St. Paul County, include: the Alberta Alcoholism and Drug Abuse Commission, the Canadian Red Cross Society, the Royal Canadian Mounted Police, St. John Ambulance, and the Departments of Agriculture, Energy and Natural Resources, and Recreation and Parks.

The Teacher Steering Committee drew up guidelines and evaluated resources in preparation for design work. In December, Workers' Health, Safety and Compensation contracted the evaluator to do a literature review for the project before commencing on the evaluation contract with the County of St. Paul.

The County of St. Paul submitted a second proposal to the Department of Education for further funding in order that the project staff could continue. The Department of Education approved a further $15,000.00 to see the project through to completion at the end of June, 1982. The designer finished in mid January and the coordinator continued until the end of the project.

In January, designing teachers met with a few of the Teacher Steering Committee members and the project staff to commence the design work. Seven units were designed by teachers with a different topic per grade from Early Childhood Services to grade six, based on Green's approach. The units were taught in three classrooms per grade by the design and pilot (randomly selected) teachers and then tested for their effectiveness in changing knowledge and attitudes about safety. For a detailed description and a report on the results see Dr. Kerrie Pain's Evaluation Report for this project.

The units were revised by design and pilot teachers, the evaluator and the coordinator after the results of the tests were known. Final recommendations to the County and the other departments and agencies involved were identified by the Teacher Steering Committee, the evaluator and the coordinator. The project concluded in July 1982. All of the resources and files to the project were consolidated in the office of the Alberta Safety Council to make them readily accessible to interested individuals and agencies.

C. HIGHLIGHTS

1. Interdepartmental Steering Committee

The Interdepartmental Steering Committee went through some interesting changes in the two years from formation to disbanding. It started off as a working committee with four members. After the coordinator was contracted in 1981 the committee expanded its membership and changed to a financial and advisory role. The individuals representing the different departments did not remain constant. There was about a fifty percent change-over.

Once the Teacher Steering Committee was formed much of the leadership and direction for the project shifted away from the Interdepartmental Steering Committee to the teachers. After the halfway mark in the project no one department maintained a key leadership position. The County and the project staff directed the project.

2. County Of St. Paul Board Of Education

The Board of Education demonstrated its foresight by becoming involved in the project. Their chairman actively participated by attending an Interdepartmental Steering Committee meeting and sitting on the Evaluation Committee. It was the first school division in the province to make it a policy to have school safety committees.

3. School Safety Committees

A policy was set by the County of St. Paul, Board of Education in January, 1981 to form school safety committees. For a full statement of the policy, see Appendix A. These committees had two main purposes. The first purpose was to identify hazards within the schools and to follow a procedure to have them rectified. Once the procedure was understood and implemented most of the hazards were removed. The second purpose was to act as a resource in safety awareness and safety curriculum design. Until the hazards were removed, the teachers indicated that they were not interested in an educational program. Some of the teachers on the school safety committees participated on the Teacher Steering Committee, as design teachers or as pilot teachers.

4. Superintendent

The Superintendent played a very key role all the way through the project. He not only participated in planning and setting direction but in finding funds for the project to continue. Motivating his staff to see the merits of the project plus responding to their needs and concerns wherever possible was no easy task.

He played an active part on the Interdepartmental Steering Committee and the Evaluation Committee. This required several trips into Edmonton. He met often with project staff to make decisions and solve problems.

5. Principals

The principals played a major role in supporting the project by assisting in the committee work through ensuring that substitutes (sometimes themselves) were available for the teachers. The principals also provided leadership to the project by suggesting the direction for implementation. It was the principals who first indicated that if they were to be involved in the project, it should also be an instructional program for primary as well as high school, which was integrated into the curriculum and not just a competitive program. They were also involved in the final decision to limit the program from Early Childhood Services to Grade Six.

6. Questionnaire

The results of the questions on safety teaching time and use of resources are available in the Evaluation Report for this project. The results of the question on the teachers' position with regard to the Reach For Safety program is not covered. Because the decision had been made to expand the program to include Early Childhood Services to Grade Twelve, not just vocational high school as is one case in Ontario, it was important to find out how teachers felt about the use of competition. The response from the teachers indicated that the majority of them felt that competition was not an effective way to promote learning and that emphasis should be placed on an instructional program. This endorsed the principals' recommendations. Competition could be used at the end, after the learning program was in place.

It was on the basis of these results that the Reach for Safety program, as a competition similar to Reach for the Top, was set aside completely and a new approach to the project was considered.

7. Inservices

a. Two small inservices were held in May of 1981. Approximately ten teachers attended each inservice. The teachers were provided with resources available on safety, accident statistics and Green's approach to safety education.

It was hoped that the twenty teachers would be able to share the concepts and information with the rest of the teachers. However, at the end of the inservices it was recommended by the teachers that all the County teaching staff should be exposed to the information at an all day inservice. Some of the teachers expressed a desire to have a curriculum guide on safety.

b. In September 1981 a major full day inservice was held for all the teachers in the County schools. The purpose of the inservice was to provide teachers with a rationale for teaching safety, an approach to safety education with guidelines for designing units and safety resources. A few teachers were asked to assist with the inservice as small group leaders.

Most of the teachers found the inservice very frustrating and confusing. Learning a new approach to unit design in such large groups of people given only one day proved to be impossible. It was also apparent that many of the teachers were hostile to the project because they felt it was "laid on" by the Government. Too much was being expected of the teachers to design units using a new approach which focused on safety attitudes, with only a one day inservice. Most teachers have not had direct training in how to affect attitudes.

The teachers found the resources and resource people very helpful. It was a rare opportunity for the teachers to hear about the resources available from such a wide range of agencies. It was also a good opportunity for the agency people to meet each other. As a result of the inservice, important changes were made in the project which included the formation of a Teacher Steering Committee.

8. Teacher Steering Committee

A Steering Committee composed of one volunteer teacher from each of the seven County schools was formed in November 1981. The teachers on this committee brainstormed and came up with an outline for action, new objectives and role descriptions for themselves and others involved. This committee worked very hard at drawing up guidelines for unit design, organizing resources and talking with their fellow staff about the project. If these teachers had not succeeded in identifying a viable new direction for the project, it may have stopped or at least would not have finished with such positive results.

Because no complete units on safety focussing on attitude change could be found, the committee decided that design work on units would need to be done. A few of the Teacher Steering Committee members worked closely with the designing teachers.

The Teacher Steering Committee selected the safety topics for unit design based on the most recent statistics on childhood accidents in Alberta and in the St. Paul vicinity and subjectively on the basis of needs they felt the students had.

The safety topics selected were:

Early Childhood Services	-	Household Poisons
Grade One	-	Pedestrian
Grade Two	-	Fire
Grade Three	-	Playgrounds
Grade Four	-	Electrical
Grade Five	-	Bad Weather
Grade Six	-	Recreational Vehicles

9. Design Teachers

Two teachers per grade from Early Childhood Services to Grade Six agreed to design units on safety to be integrated into the curriculum. The initial plan was to design two units per grade. Once the teachers started working on their units it became apparent that with the allocated time for design work of two days, only one unit could be designed. Learning the new approach, studying the resources and trying to write behavioral objectives was very time consuming. Understanding safety attitudes and designing activities aimed at affecting them proved difficult. As discussed in the evaluation report, little seems to be known about safety attitudes, and how to assess or affect them.

When the units were finished and the resources assembled the design and pilot teachers taught the unit to their students.

The design teachers met for half a day with the pilot teachers, the evaluator and the coordinator to revise the units after the evaluation was completed.

10. Pilot Teachers

The pilot teachers were chosen randomly to teach a unit, with the option to say no if they were strongly opposed to the task. (There were no refusals.) The pilot teachers met with the design teachers to discuss the units and the resources. At this time a tentative schedule was set for the teaching and testing of the students. The teachers were given six weeks to instruct the units. In reality most teachers only had three to four weeks available to them, given other teaching commitments in their time schedules.

After the evaluation was completed and the initial results tabulated and shared, the pilot teachers assisted the design teachers with revising the units.

11. Project Staff

The coordinator was contracted in January, 1981 to coordinate the project. Some of the initial tasks included:

a) Reviewing the Grey County resource and having the sections not previously updated sent to content experts for their input;

b) Researching safety regulations which pertained to schools, students and teachers for the Guidelines for Developing School Jurisdictional Health and Safety Policy (for the Alberta Education Adhoc School Safety Committee);

c) Finding resources for teachers to use in instructing safety;

d) Clarifying the goals and objectives of the project. The objectives for the Reach for Safety program didn't match the Grey County program, which was to be the basic resource.

After the project designer was contracted, a questionnaire to acquire teacher input was designed and distributed. The designer wrote a "Resource Book #1" to be used at the first inservice. This book provided background information on the childhood accident problem and ideas on different approaches to health and safety education.

Following the first inservice, it was apparent more resources were needed. Contact was made with Social Services and Community Health for statistical information. This department was in the process of drafting a document call Accidental Deaths and Injuries of Children and Youth, 0-19 years of age in Alberta. The project staff referred to it as "Resource Book #2" but it subsequently was not available until the spring of 1982. The coordinator prepared all the resources for the fall inservice, contacting many agencies to participate as content experts. She also had an early draft of the Grey County Program printed to be used as "Resource Book #3".

The designer spent time preparing a "Resource Book #4" for use at the fall inservice which focused on the diagnostic approach to health education which became the basic guide for future unit design. The project designer also wrote the final draft for the Guidelines for Developing School Jurisdictional Health and Safety Policy.

After the fall inservice the project staff worked very closely with the Superintendent to decide how the project should change. It was decided to set up a Teachers Steering Committee to guide the project locally. Working closely with the teachers and the staff, the Committee developed guidelines, organized resources and prepared for unit design in January, 1982. Both the coordinator and designer met with the evaluator for the project to discuss what she had been able to learn about safety attitudes. These discussions assisted in the development of the guidelines and unit design.

Because of funding uncertainty only the coordinator continued after mid January, 1982. The coordinator worked with the design teachers in writing the objectives, identifying activities for affecting attitudes and providing resources. Once the design work was finished the coordinator gathered enough support resources for each school to have one copy. The resources were organized into kits for each topic. The coordinator and evaluator met with the pilot and design teachers to orientate the pilot teachers and plan for the teaching and testing of the units. As the units were being taught, the coordinator had the units validated by content experts and education consultants.

When the teaching and testing was finished, the coordinator and evaluator met with the pilot and design teachers to revise the units. The test results plus the information from the validation process as well as the teachers' classroom experiences were used to make the revisions. The coordinator then took the revised units, made further changes and edited the final versions.

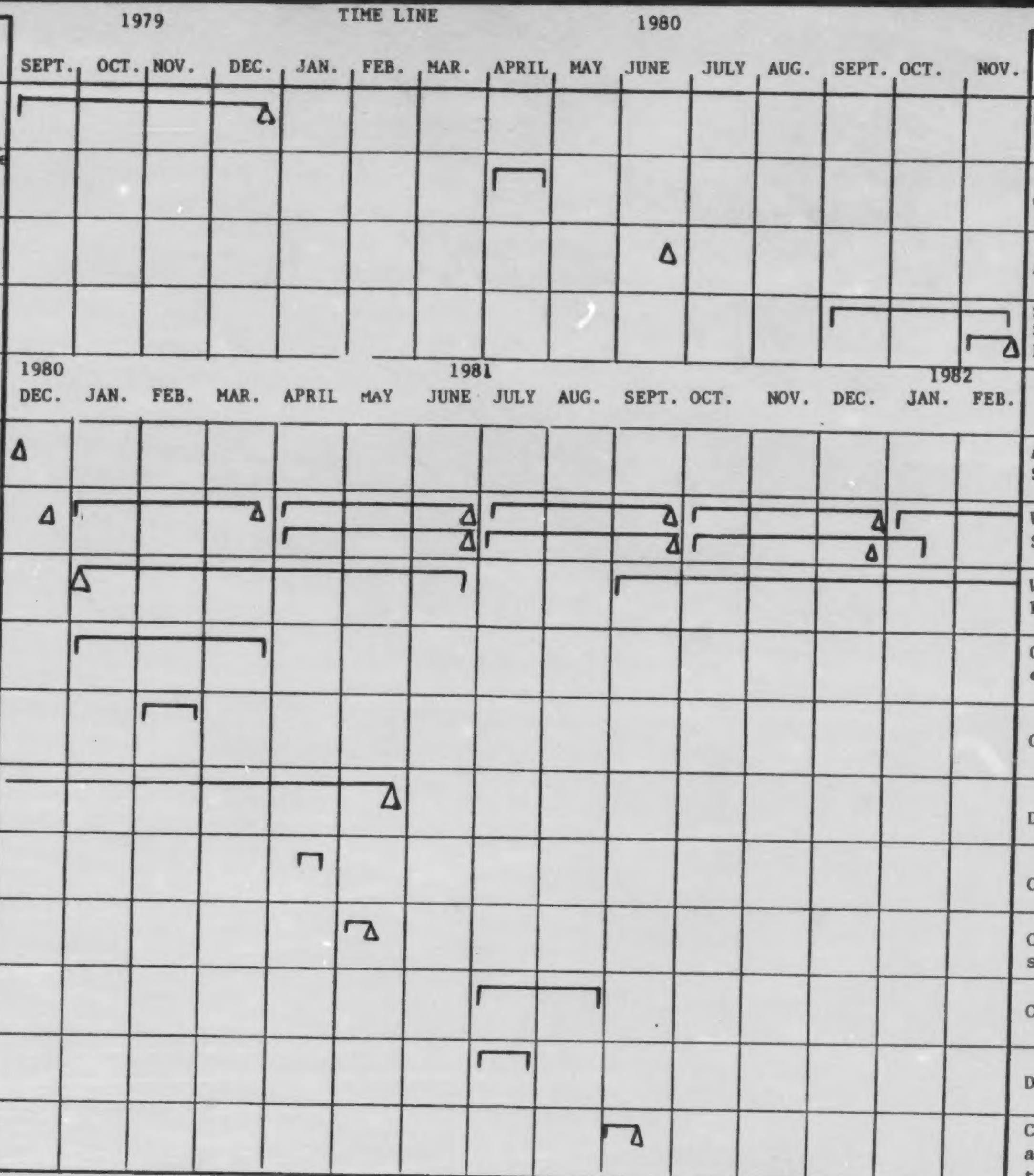
After editing the units the coordinator wrote the final report for the project. All of the information relevant to the project was then transferred to the Alberta Safety Council to be made available to anyone requesting it.

D. FUNDING

The funding for the project came from a variety of sources. The agencies listed below assisted by contracting the project staff for two to three month periods of time and by providing the County of St. Paul with grants. Funding for the evaluation is not included here.

Alberta Association of Industrial Safety Councils	500
Alberta Education	20,000
Alberta Safety Council	5,000
Alberta Social Services & Community Health	5,000
Alberta Transportation	5,000
Alberta Workers' Health, Safety and Compensation	25,000
Canadian Petroleum Association	5,000
County of St. Paul	36,228

The many instances of persons working overtime without pay and donating so freely of their time is greatly appreciated and a monetary value can never be placed on such contributions. The contribution of Alberta Workers' Health, Safety and Compensation for office space, clerical assistance and printing is not included in the above figure.



DESCRIPTOR	NOTES
Initiation of project-letter from C.P.A., formation of Committee	Canadian Petroleum Associatio Dept. of W.H.S.&C. & Educatio
Members of Steering Committee visited Reach for Safety Competitions in Ontario.	Original Steering Committee
Alta. Safety Council agreed to change Grey Counties Operation Safety Program	Alberta Safety Council
Negotiations with County. Principals Association - St. Paul.	Steering Committee & Cty. of St. Paul. Principals & W.H.S. & C.
Alta. Education Ad Hoc School Safety Committee approved in principle.	Alberta Education Ad Hoc School Safety Committee
Co-ordinator on contract. Designer on Contract.	W.H.S.&C. & Interdepartmental Steering Committee
School Safety Committees & Policy set in County of St. Paul.	W.H.S.&C. & County of St. Paul.
Update of resources on Grey County.	Co-ordinator and content experts
Research for Guidelines for Developing School Jurisdictional Health & Safety Policy	Co-ordinator
Alberta Education Ad Hoc School Safety Committee Disbanded	Department of Education
Co-ordinator attended First National Conference on Child Accidents & Prevention	Co-ordinator
Inservice for select teachers in St. Paul County	Co-ordinator, Designer superintendent
Preparation for fall in-service.	Co-ordinator
Final draft of Guidelines for School Jurisdictional H. & S. Policy.	Designer
Fall Inservice.	Co-ordinator & Designer and all County of St. Paul teachers.

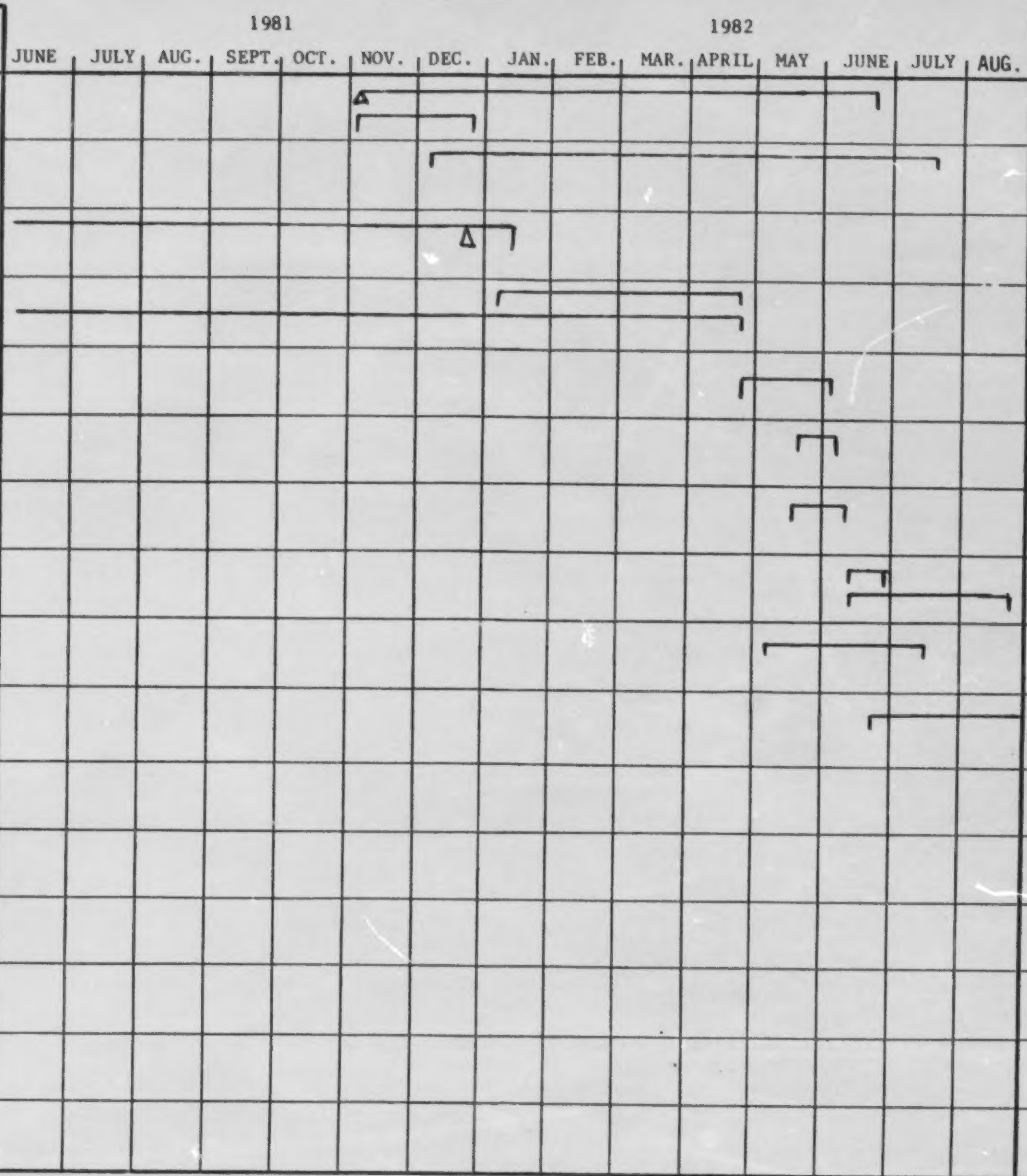
LEGEND

START DATE — END DATE
SCHEDULE DELAY
PROGRESS LINE
○ SCHEDULED REVIEW
● COMPLETED REVIEW
Λ DECISION POINT (See notes)
Δ DECISION MADE

ISSUE DATE: ______
REVISION NUMBER: ______
REVISION DATE: ______
PREPARED BY: ______
PAGE ___ OF ___

DESIGN OF UNITS

TIME LINE



DESCRIPTOR	*NOTES*
Teacher Steering Committee Formed guidelines developed recommendations	Co-ordinator & designer & eight County Teachers.
Evaluator	W.H.S.&C., Education & County of St. Paul
Designer position terminated	Interdepartmental Steering Committee
Teacher Design Work Commenced Resources gathered	Design Teachers, 2 Steering Committee Teachers Co-ordinator.
Units taught by Design & Pilot Teachers.	Pilot & Design Teachers
Student Testing	Evaluator, Research Assistant & Teachers
Validation process of the units.	Co-ordinator, Content Experts & Education Consultants
Revision of units by teachers/by coordinators.	Pilot & Design Teachers, Evaluator, Co-ordinator.
Data analysis, evaluation report.	Evaluator
Coordinators final report prepared and sent to Dept. of Education.	Co-ordinator.

LEGEND

START DATE — END DATE

SCHEDULE DELAY

PROGRESS LINE

○ SCHEDULED REVIEW

● COMPLETED REVIEW

Λ DECISION POINT (See notes)

Δ DECISION MADE

ISSUE DATE: ______

REVISION NUMBER: ______

REVISION DATE: ______

PREPARED BY: ______

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PART II UNIT DESIGN

A. PROCESS

1. Decisions

The decision to embark on unit design was based on the following:

a) The teachers at the fall inservice expressed a desire to have a safety curriculum if they were going to integrate safety into their classes;

b) Adequate resources which had an emphasis on attitudes were not already available.

The Teacher Steering Committee was formed to make decisions as to how the project should proceed. The Teacher Steering Committee drew up a plan of action for unit design and field testing which was approved by the schools' administrations. As the educational approach was already selected, the main tasks of the Teacher Steering Committee was to prepare for design work. This included developing guidelines for the design teachers to use, identifying topics for units, evaluating resources and sorting resources into topics for design work.

2. Guidelines

The Teacher Steering Committee met and chose the topics for safety units based on provincial statistics, St. Paul statistics and student needs as assessed by the teachers. Two topics were chosen for each grade. It was originally felt that one unit could be designed per day, so two days were set aside for unit design. The project staff assisted the Teacher Steering Committee in drawing up guidelines for the development of the units. The main purpose of the guidelines were to explain the educational approach and assist in fostering an emphasis on attitudes and writing behavioral objectives.

3. Design

When the guidelines were finished and the resources organized into topics, the Early Childhood Services teachers started their design work. It was discovered very quickly that designing one unit would take more than one day. It was therefore decided that only one topic per grade would be designed.

The work of the Early Childhood Services teachers indicated that there were also further changes that needed to be made to the guidelines. It was more difficult than anticipated to write behavioral objectives, especially ones specific to attitude. Part of the difficulty was due to the problem of grasping what an attitude is and specifically, a safe attitude. As the work progressed it became apparent that more assistance was needed in clarifying the attitude concept. The guidelines were revised in the hope that they would be of assistance when design teachers from Grades One to Six started their work.

30

After the Early Childhood Services teachers had met twice and discovered they still needed another half day to finish their first unit, the Division One (Grades One to Three) and Division Two (Grades Four to Six) teachers met on two separate days. It was initially hoped that Division One and Two teachers could meet together on the same day but there was a problem in coordinating enough substitute teachers. This turned out to be blessing in disguise because even with the fact that there were only six teachers meeting per day, the coordinator was unable to give the amount of time to each group needed to facilitate discussion and understanding of behavioral objectives and attitudes as she had been able with the Early Childhood Services teachers. One Teacher Steering Committee teacher also met with each of the Division groups.

It became clear that teachers are not trained in affecting attitudes directly and do not generally spend very much time in writing behavioral objectives. For teachers to embark on this kind of curriculum design, a day should be set aside to focus on understanding attitudes, kinds of things that affect attitudes and how to write behavioral objectives. An inservice could be of assistance in working with larger groups of teachers. The ideal situation would be for teacher training to be such that the teachers are instructed more thoroughly in the processes of attitude change and writing behavioral objectives at the University.

All the units included a preteaching assessment and tried to include activities which focused on attitudes. Each of the units were tested in the classroom by designing teachers and pilot teachers (other teacher randomly selected).

4. Resources

The coordinator gathered resources for a wide range of safety topics. The Teacher Steering Committee sorted through the resources and organized them according to topic. They then evaluated them for use according to effectiveness and appropriateness for various users (teacher, student or parent).

Some of the topics had a proliferation of resources but for others there was a dearth. This meant that in some of the units the identification of activities could be based on a wide range of resources, while in other units it meant utilizing one or two resources or developing new ones.

5. Validation Process

The units were reviewed for content and educational effectiveness by education consultants and content experts. For a list of individuals and agencies who participated in the validation process see the participants listed at the beginning of the report. Because of the focus on attitudes, in retrospect it would have been valuable to have had experts in behavioral science included in the validation process. This feedback would have been very valuable in revising the units.

6. Revisions

All of the units were revised by the pilot and design teachers with the assistance of the coordinator and evaluator. Teachers from each grade met for half a day to look at the information from the test results, to discuss what had actually happened in the classroom and to make revisions. Revisions were made based on the test results, the information from the validation process and the teachers' experiences. The coordinator then took the revised units, made the final revisions and edited.

7. Conclusion

A major problem that kept occuring in the design process in this project was lack of time. There was lack of time for design, lack of time for teaching and lack of time for revision. This is an element that in future design work must be looked at carefully to ensure that adequate time is built in.

The teachers had a difficult task to work through but once down to the actual design they were very cooperative. Many of them in fact, enjoyed the professional contact and the time spent, although short, working on curriculum.

B. UNIT DESCRIPTION - OBJECTIVES, RESOURCES

1. Early Childhood Services: Household Poisions

The overall objective of the household poison unit is: THE STUDENT WILL BECOME FAMILIAR WITH THE VARIOUS TYPES OF POISON AND WILL DEMONSTRATE AN UNDERSTANDING OF PREVENTATIVE PROCEDURES. Many of the activities suggested in the unit include a home component. The response by the parents to the unit was favorable. Because parent involvement is a very important part of early childhood education, the teachers identified resources and suggested topics for the parent development program of the Local Advisory Committee.

There were ample resources for most of the Early Childhood Services unit available from a variety of sources. One of the activities included in the unit is learning the hazardous symbols. One resource which was not found and had to be made, was a classroom set of poster cards with the hazardous symbols on them. These were used to have the students practice naming the symbols, plus as a stencil to make puzzles. Another resource which was developed for the unit and which could also be used for other safety topics, was a spy glass character of a young girl. (See Appendix E).

A spy glass was chosen because it is used as an extension of a person and because it focuses on the idea of looking and seeking out a clue. Young children like to participate, point out problems and pretend. Each student can be given a spy glass, either, the shape of the caricature or a regular one to spy unsafe situations.

Both the students and the teacher enjoyed the unit. The teachers found it was practical to teach it compressed together and then continue to reinforce it over time as applicable incidents arose.

This unit could be taught from Early Childhood Services to Grade Three. The teachers felt that the unit had a fairly high impact on the students because of the candid comments from the students in different situations where potential poison were found.

For Example: On a field trip after the unit was finished, the students saw a household poison on some steps of a house. They informed the owner of this danger to children.

2. Grade One: Pedestrian Safety

The broad overall objective of the pedestrian safety unit is: TO HELP STUDENTS DEVELOP KNOWLEDGE, SKILLS AND ATTITUDES NEEDED TO DEMONSTRATE BEHAVIORS THAT WILL ENABLE THEM TO FUNCTION SAFELY IN A TRAFFIC ENVIRONMENT.

Initially there seemed to be an overload of resources for pedestrian safety. Once they were looked at more closely, it was apparent that they were not in an easy format to organize into a unit. The teachers had a difficult time going through all the little pamphlets and posters that were utilized for this unit, mostly from the Alberta Motor Association and the Alberta Safety Council.

The teachers felt after they had taught the unit that there was a lot of information about traffic signs which was also applicable to bike safety. They thought that it would make sense in future unit design, to combine bike safety and pedestrian safety together.

The teachers and students enjoyed the unit. The teachers felt that more time was needed to present the unit but that teaching the unit massed together rather than stretched over time made more sense and probably had a higher impact. It would then be possible to continue to reinforce the proper behavior later. They also suggested that some of the unit would readily integrate into regular curriculum if time permitted and there were no deadlines as there were with the project. This unit could be taught from Early Childhood Services to Grade Four.

3. Grade Two: Fire Safety

The overall objective for fire safety is: THE STUDENT WILL BECOME FAMILIAR WITH FIRE HAZARDS, PREVENTION, PRECAUTION AND BE ABLE TO DEMONSTRATE THE PROCEDURES TO FOLLOW IN CASE OF FIRE.

There were three main curriculum guides which were available on fire safety. The Learn Not to Burn curriculum, which is available from the Fire Prevention Branch, Department of Labor for grades 1-8; Fire and Fire Safety from the Fire Department, City of Edmonton; and Elmer the Safety Elephant and Fire Safety, from the Alberta Safety Council. Initially the designing teachers felt that there was no work to be done on this unit as excellent resources on the topic already appeared to exist. Once the teachers had reviewed the resources, however, they felt there was a need for further design, as most of the resources did not really directly focus on attitudes. The Learn Not to Burn curriculum did focus on attitudes but the teachers did not find it an easy resource to understand and utilize. They felt it would take considerable time to work through the curriculum guide to figure out how to use it. The multi media kit from the Edmonton Fire Department was very easy to utilize but did not specificly focus on attitudes. The same was true for Elmer the Safety Elephant. What the teachers attempted to do was bring together the valuable parts of the different resources into one more concise unit. The teachers felt that more work still needed to be done to zero in on attitudes.

The teachers had mixed feelings as to whether there was a change in their students' attitudes, but they did feel that the students knowledge had been changed. The teachers and the students enjoyed the unit. If time had permitted it could have been better integrated into the curriculum. As it was, most of the teaching time had to replace other curriculum content. The teachers felt that after initial instruction of the content, reinforcement over time may be effective in affecting attitudes. The unit could be taught from Grade One to Grade Six.

4. Grade Three: Playground Safety

The overall objective of the playground unit is: THE STUDENT WILL BECOME FAMILIAR WITH HOW TO PLAY SAFELY ON PLAYGROUND EQUIPMENT AND IN THE PLAYING FIELD AND WHAT TO DO IN CASE OF ACCIDENTS.

There is a real shortage of resources on playground safety. Most of the information focused on how to choose safe playground equipment. Very little provided information on safety on the playground or how to teach it. Elmer the Safety Elephant Visits the Playground was the key resource which the unit was designed around. This resource was very helpful but did not focus directly on safety attitudes.

The teachers enjoyed teaching the unit. They felt that it should be taught in the fall so that proper behavior on the school playground could be reinforced all year long. Some of the Grade Three teachers did not teach all subjects so activities which needed to be taught in other subjects such as physical education or music, were taught by non pilot or design teachers. This arrangement seemed to work well. This unit could be taught starting in Early Childhood Services right up to Grade Three or Four.

5. Grade Four: Electrical Safety

The overall objective for the unit is: THE STUDENT WILL DEMONSTRATE A WILLINGNESS TO FOLLOW SAFE ELECTRICAL PRACTICES INDOORS AND OUTDOORS.

There were useful resources that could be sent home to parents but as far as the number of resources available for the teacher to use in the classroom, there seemed to be a shortage. Alberta Power and the Electrical Protection Branch provided most of the resources on electrical safety. The design teachers had to call upon their own resources to design this unit. One of the main resources used with the students were comic books. It was felt that inspite of the fact that some of the pictures in some of the comic books did not demonstrate a true picture of what a situation might look like or did not really show the safe way of doing things, the students enjoyed them. The teachers could utilize the comics to have the students point out what were unsafe situations. The unit fit very nicely into science since electricity is one of the science topics. It was felt that the unit could be taught from Grade Four to Grade Nine.

6. Grade Five: Winter Clothing (Safety In Winter Conditions)

The overall objective is: TO DEVELOP SAFE ATTITUDES AND LEARN PREVENTATIVE MEASURES AND TREATMENT OF CONSEQUENCES THAT COULD ARISE DUE TO WINTER WEATHER.

This unit in fact focused not only on winter clothing but on safety in the winter. The title of the unit was changed after it had been tested to Safety in Winter Conditions.

There were a fair number of good resources available on this subject. The resources mainly came from the outdoor section of the Recreation and Parks Department and the Hunter Training section of the Fish and Wildlife Division in the Energy and Natural Resources Department.

One of the main problems in instructing this unit was the fact that when it came time to actually do the instruction, the winter weather was gone and spring was well on its way. The designing teachers taught parts of the unit as they were designing the unit and as it fit into their timeline in the curriculum. The pilot teacher taught the unit as a complete unit during the spring.

The teachers felt that the unit readily integrated into the curriculum and could be taught from Grade Four to Grade Twelve.

7. Grade Six: Recreational Vehicles Safety (Motorcycle, Snowmobile, Small Boats)

The broad overall objective is: THE STUDENT WILL BECOME FAMILIAR WITH THE SAFETY FEATURES OF THE MACHINE, REGULATIONS REGARDING THEM, BE ABLE TO DEMONSTRATE THE SAFE WAY OF HANDLING THEM, HOW TO PREVENT ACCIDENTS AND THE FIRST AID PROCEDURE IN CASE OF INJURY.

The specific recreational vehicles identified were: motorcycles, snowmobiles and small boats. The unit format for all three is basically the same.

Recreational vehicles as a topic appeared not to have a high number of resources. Of the three topics, snowmobile safety seemed to have an extreme shortage of available resources. No department has focused on the question of snowmobile safety.

The motorcycle section of the recreational safety unit was the only part tested. This was due to the timing. After teaching the unit the teachers felt that the students were too young to be taught motorcycle safety since they could not legally drive motorcycles, even though there are students in Grade Six driving motorcycles illegally. Information that students need to know about motorcycle safety could be taught, at least in part, when instructing students about bicycle safety and moped safety. As far as future instruction of the units, small boat safety could be taught from Grade Six to Grade Nine, snowmobile safety from Grade Six to Grade Twelve and motorcycle safety in Grade Eight and Grade Nine. The unit was broken up into three separate components.

PART III RECOMMENDATIONS

This project broke new ground in the field of safety. It brought together a wealth of information and ideas from around the world. Although the planners of the project did not discuss a vision of a future society, the aim of the project expressed the desire to exchange the present society for one which has fewer accidents.

The following recommendations are in two parts, one directly reflecting the activities in the County of St. Paul and the other reflecting the experiences of the coordinator, which included discussions, meetings and letters bringing together problems and issues about safety and accident prevention. Departments and agencies have been identified because of their direct or indirect potential involvement in the recommendations.

A. PROJECT RECOMMENDATIONS

1. This instructional method appears to hold promise for increasing knowledge and perhaps changing attitudes. Further research is needed to increase our understanding of the processes involved.

2. It is recommended that units be further revised by specialists in attitude change to make the attitude component of the units more specific and incorporate additional techniques.

3. It is recommended that the revised units receive a further field test in a different school system to see if more teaching time and/or more specific teaching can increase attitude changes.

4. The safety attitude test developed for use in this study appears to be a viable instrument. Further analysis and revision of the test is recommended, particularly since there appears to be a strong need for a test of safety attitudes in related types of research.

5. A comprehensive safety education plan should be drawn up.

   The plan would need to cover the school, the community and the worksite.

   a. The school program should include:

      i) Proper procedures;

      ii) What are the hazards;

      iii) Why it is important to stop and think;

      iv) Taking responsibility for self and others.

   In elementary grades it should cover general safety. In secondary school it should cover more specific topics such as careers, athletics, recreation, driver safety and first aid.

b. Community Safety Education could provide an awareness program on

   - i) Driver safety;
   - ii) Home Safety;
   - iii) First-Aid.

   The information could be provided through community associations, television and radio programs and continuing education.

c. Worksite safety should include driver safety, home safety, effects of alcohol as well as safety information specific to the worker's trade and other trades which work side by side. Specific information on worker rights and responsibilities pertaining to safety should also be taught.

6. The Department Of Education should:

   a. Consider integrating safety education into other areas of the curriculum besides health. Possibly the inclusion of safety content in other subjects would demonstrate the applicability of theory in a practical sense in the home and the workplace.

   b. Provide guidance to teachers through inservices on how to affect students' attitudes. If teachers are assisted in this way, they may be able to more comfortably and effectively assist their students.

   c. Consider creating a position for a full time Health and Safety Consultant who is not only responsible for the health curriculum but who also works with other curriculum consultants to integrate safety into other subjects. This person would also liaise with other departments involved with health and safety to coordinate the school program with those in the community and workplace. This project has just scratched the surface of what is available and what could be possible.

   d. Participate in drawing up a comprehensive safety education program.

   e. The Teacher Steering Committee specific made recommendations relating to instructing students about occupational health and safety. They recommended that consideration be given to having secondary students learn about their rights, occupational hazards and preventative measures and that this information should be integrated into the curriculum. A small survey was taken of Occupations 10 teachers asking for their reaction to this information. They responded by stating there would be little difficulty in integrating the safety information. Using this information in a wide range of subjects beyond occupations or work experience should be considered otherwise only a minority of students will be exposed.

      i) Educate students as to their rights as employees in regards to health and safety.

Work Experience - orientation to job site safety, looking at regulations (Workers' Health, Safety and Compensation) for his/her particular job.

Law 20 - regulations; legal recourse; civil rights

Occupations 10 - regulations, statistical information in health & safety

ii) Educate students as to their responsibility as employees.

Occupations 10
- following regulations
- safety awareness
- reporting of unsafe conditions (grievance procedures)
- safe, responsible behavior
- safety equipment usage - protective clothing

iii) Educate students as to organizations set up to aid them in pursuit of a safe work place.

Occupations 10 - introduce role of:

a) Joint Worksite Health & Safety Committees
b) Workers' Health, Safety and Compensation

iv) Have students recognize the health and safety aspects in a career choice.

Occupations 10 - statistical information in health & safety of a particular job or career. (eg. inherent emotional stresses, health hazards, types and frequency of accidents etc.)

v) Develop the ability to recognize inherent dangers in risk taking behavior.

Health, Occupations 10, Work Experience, Driver Education:

- cutting corners to save time versus taking time for safety
- minimizing the effect of peer group pressure to engage in unwise risk taking behavior through the fostering of a positive self image
- awareness of the risk and the cost of losing

vi) Instill an awareness of the real mental, physical and financial costs of accidents.

Occupations 10 - statistics on costs to industry
- analysis of impact on individuals:

  a) own abilities
  b) family
  c) income and expenses
  d) work place

vii) Develop the abilities of the student to assess the safety of a work place.

Work Experience - have the students assess the safety of their work placement, possibly in the form of a report. (Notes: The employer should be forewarned of this exercise. This should be acceptable to the employer as students should not be placed in an unsafe work place.)

7. Workers' Health, Safety And Compensation should

   a. Work closely with the Department of Education to respond to the needs of the industrial arts teachers. The industrial arts teachers are in a good position to affect the safety attitudes of future workers. Workers' Health, Safety and Compensation could provide up to date information to these teachers through newsletters or assist in writing safety manuals for teacher use.

   b. Participate in drawing up a comprehensive safety education program.

   c. Do further study on what a safety attitude is and how to affect it, using the information gained from this project and by applying the approach used for the students to adults.

   d. Work with the Department of Transportation to examine the impact of traffic accidents on the workplace. Off the job accidents are having a negative impact on the workplace and should be looked at carefully. Alcohol is a factor which needs to be considered.

   e. Participate in a comprehensive accident surveillance system.

8. Teachers should

   a. Try to help students acquire safe attitudes.

   b. Request assistance in how to teach safety and in acquiring better resources.

B. COORDINATORS RECOMMENDATIONS

1. A Comprehensive Accident Surveillance System should be set up

A comprehensive surveillance system, such as the one in Britain, could monitor accidents closely so that decisions could be made as to what steps need to be taken to rectify the situation. The system would need to be computer-based so that information could more readily be provided. Agencies and departments which could be involved in the system would include doctors, clinics, R.C.M.P., Industry, Safety Educators, Health Units, Ministry of Workers' Health, Safety and Compensation, Departments of Labor, Transportation, Hospitals and Medical Care and Social Services and Community Health. For an example of a summary report and a description and objectives from the Home Accident Surveillance System in Britain, see Appendix B.

2. The Department of Advanced Education And Manpower should

   a. Negotiate with the universities and colleges providing teacher training to include more information, understanding and experience in:

      i) effective health and safety education;

      ii) affecting attitudes.

   b. Participate in drawing up a comprehensive safety education program.

   c. Negotiate with the technical schools, colleges, universities etc. to provide instruction to students about:

      i) impact on lifestyle of the chosen career;

      ii) ways of changing the impact;

      iii) effect of off the job injury to family, society and workplace;

      iv) safety on the job;

      v) rights and responsibilities of the employer and employee.

3. The Department Of Transportation should

   a. Identify what action the department can take to promote the safer design of vehicles.

   b. Consider focusing on mandatory child restraints to effect a change in adults' attitudes and behavior. A greater use of the public media using some of the concepts used by A.A.D.A.C. may help increase public awareness and acceptance of seat belts.

   c. Participate in a comprehensive accident surveillance system.

d. Participate in planning a comprehensive safety education program.

e. Work closely with the Department of Education to make driver education available in all school divisions.

f. Assess traffic safety resources presently available in different agencies and provinces, find ones which are effective and identify where the gaps are. Promote the good resources and decide how the gaps can be filled, whether by the department or through an agency.

Since traffic accidents are the number one cause of accidental injury, this department has a key role to play.

4. The Department of Social Services And Community Health should

a. Take a lead role in setting up a comprehensive accident surveillance system.

b. A communication network could be set up with other departments, such as Transportation and Workers' Health Safety and Compensation to provide resources to the community based health units. The Health Units provide a good avenue to community education.

c. Continue to work towards alleviating the problem of accidental poisonings through medical and information centers and promoting educational poison programs.

5. The Alberta Safety Council should

a. Take on a stronger leadership role in coordinating safety within the province. This could be done by submitting a proposal to government departments to assist in gaining support for seat belt legislation or setting up a comprehensive accident surveillance system.

6. The Canadian Petroleum Association and other industries should

a. Keep track of both on the job and off the job accidents. Design safety training for staff which includes both on the job safety and leisure time safety. Building Products of Canada is one example of an industry which identified their safety problem and had their staff participating in designing a safety program to affect both on and off the job safety. Their program proved to be effective.

b. Consider the information form this project for implications in affecting the attitudes of workers.

c. Continue to monitor the work of the government in safety education.

7. The Individual should

a. Think about what this society should look like.

b. Look around and see how to make life safer.

c. Consider what principles life is based on.

d. Think about how to utilize your position and abilities to contribute to this change.

e. Take responsibility for your life.

f. Identify how to help other people take responsibility for their lives.

Changes are not going to come about until individuals take an active part not only out of duty in their positions at work but also as members of this society. The above are some points which may help the individual see how to make an ideal future society come about.

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APPENDIX A

COUNTY OF ST PAUL

POLICY # 4.5

15

SCHOOL SAFETY COMMITTEES

In order to attempt to provide an accident-free and safe school environment for students, teachers, other employees and members of the public, the Board of Education has established the following procedures:

1. Each school shall have a Safety Committee. This committee may be comprised of teachers, custodian, other employees, parents and/or students.

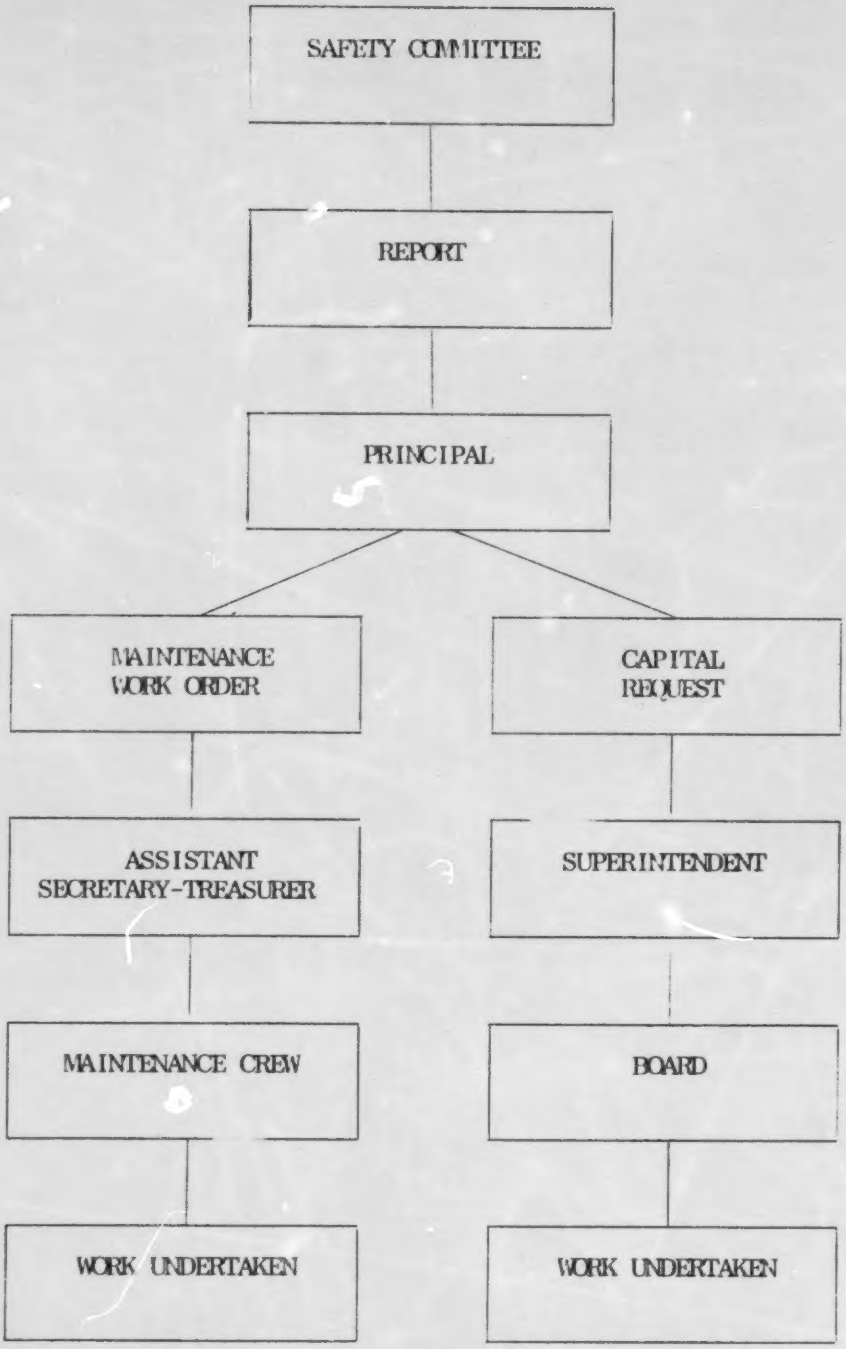
2. The Safety Committee is charged with the responsibility of making periodic inspections of the school to determine hazards to health and safety.

3. The Safety Committee shall complete a "Joint Worksite Health and Safety Committee Minutes" form as produced by Alberta Occupational Health and Safety, following each inspection of the school.

4. A copy of the Joint Worksite Health and Safety Committee form must be filed with the school Principal.

5. The school Principal shall initiate all action required from the Joint Worksite form by way of Maintenance Work Orders, requests to the Superintendent, or requests to the Board through the Superintendent.

6. In order to facilitate the work of the Safety Committee, the following flow chart shall be utilized:



7. In the case of work undertaken by the County Maintenance Crew the following safeguards are in place to check that the flow chart is being followed:

    a) One copy of the Maintenance Work Order shall be returned to the Principal after being approved by the Assistant Secretary-Treasurer;

    b) At the end of each month the Principal shall complete a "Principal's Maintenance Check List" which is to be forwarded to the Assistant Secretary - Treasurer.

8. If, after all steps on the flow chart have been followed, a health and safety hazard has not been rectified, then the Safety Committee is empowered to:

    a) Call upon the Superintendent of Schools for assistance in alleviating the concern;

    b) Call for an official inspection from Alberta Occupational Health and Safety. At the same time the school Principal and the Superintendent of Schools must be informed of such action.

9. Notwithstanding any of the above, it must be clearly understood that Alberta Occupational Health and Safety Inspectors are empowered to inspect any school at any time.

10. It is also an expectation that the school Safety Committees shall act in a resource role to provide assistance to teachers in the area of safety awareness around the school and to generally foster an atmosphere of safety in the school and to be of assistance in the area of curriculum development and implementation in the field of safety.

APPENDIX B

SURVEILLANCE SYSTEM
IN GREAT BRITIAN

SUMMARY OF HOME ACCIDENT SURVEILLANCE SYSTEM REPORT, 1979

This report covers the third twelve months of operation of the Home Accident Surveillance System; 53,939 cases have been analyzed.

A comparison with the data collected in the second twelve months shows that the small changes in the totals that have occurred are not part of a trend (see paragraph 5).

The information produced by the Surveillance System continues to be used extensively by trade associations, manufacturers, organizations such as BSI and ROSPA with an interest in safety, as well as by the Consumer Safety Unit of this Department and other Government Departments. Besides statistical summaries relating to particular groups of accidents the Home Accident Surveillance System can also provide descriptive data related to any accident group, eg. age of patient, product etc (Appendix VI is an example of such data). Such descriptive data enable those with an interest in a particular group of accidents to gain some insight into the causes of those accidents and the procedures for obtaining such information from the system are given in Section V of the report.

In order to formulate appropriate preventive measures relating to a group of accidents additional information about the events leading up to the accidents is often required. Such details about some selected accidents are being obtained in the programme of in-depth studies currently under way and summarized in Section III of the report.

OBJECTIVES AND DESCRIPTION OF THE HOME ACCIDENT SURVEILLANCE SYSTEM

In part reproduced from the 'Home Accident Surveillance System, A Report of the First Six Months Data Collection'.

A. OBJECTIVES

1. The Home Accident Surveillance System has been set up with the following objectives:

    a) to provide reliable comprehensive and nationally representative information;

    b) to enable accidents which are amenable to action to be identified and allocated priorities;

    c) to monitor the accident problem so that new hazards may be identified and new trends in known hazards investigated;

    d) to aid the evaluation of the effectiveness of preventive action;

    e) to provide a basis for estimating the costs of different types of accidents.

B. PRELIMINARY STUDIES

1. The System is based on the results of a feasibility study, details of which were given in the paper mentioned in Section I. This study showed that Accident and Emergency Departments at hospitals would yield information about a greater number of cases than any other single source (eg. family practitioners, coroners, health visitors, fire brigades and then weights and measures inspectors) and that such data could be collected using clerical assistance. It also showed that the data is comprehensive and reliable enough to be used by central and local government, industry and all concerned with safety standards and safety publicity and education.

2. During 1976 five hospitals were involved in a development phase; the objectives of this phase were to improve and adapt the data collection so that it was appropriate on a larger scale and within the constraints which existed. The hospitals recruited clerks to carry out the additional clerical work and were reimburse by the DPCP. Special attention was paid to the training and management of the clerks in a way that could be maintained when some 20 hospitals were involved. The data recording form was improved both in content and design. A sample of cases were followed up with independent interviews in the home so that the reliability of the information collected at the hospital was established; this also tested the procedures for identifying particular cases for in-depth investigation associated with research into special

problems. By Autumn 1976 the methodology and procedures were agreed and tested and data collection over a large scale was started.

C. GENERAL DESCRIPTION

1. The Hospitals

By January of this year 20 hospitals in England and Wales were collecting data for the system. This sample has been selected from those hospitals offering a 24-hour A & E Department service (there are some 250 such hospitals in England and Wales). The sample is based on consideration of such features as size and geographic location, it is a 'rolling' sample in which 10 hospitals will be replaced each year by others; hence in the long-term sample bias will be minimized.

2. The Staff

In each hospital the equivalent of at least one extra clerk has been funded by DPCP* so that the extra work can be accommodated. The clerks have been specially selected and trained and regional part-time supervisors maintain regular contact.[2] Every effort is made to ensure reliability and consistency of data.

3. The Data

The standard form is used for data recording. It includes details of:

a) the accident - a brief description of how it occurred;

b) products or features of the home involved;

c) injury type (closely associated with accident type);

d) part of body injured;

e) where in house or garden it occurred;

f) outcome of visit eg. sent home, admitted as an in-patient etc.;

g) age and sex of patient;

h) date of treatment.

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* The Safety Research Section is now part of the Department of Trade.

[2] Supervision of basic data collection is undertaken on our behalf by the British Market Research Bureau who also participated in the development phase described in Section III.

4. The System

The following narrative and flow chart describe the collection and analysis of, and output from, the Home Accident Surveillance System. Numbers in parentheses throughout the narrative refer to data flow arrows in the flow chart. It will, of course, be appreciated that procedures in some hospitals very slightly in order to suit local conditions.

Patients arrive at A & E Departments as a result of a variety of accidents and other emergencies (1). for those whose injuries were sustained form an accident in or around the home the information described in the previous paragraph is obtained and recorded on the report form shown in the Appendix. Some of this information is, in any event, recorded at some stage for normal hospital records (2) and is subsequently transcribed on to the report form (3). Other information particularly the accident related data, is gained by discussion with the patient or accompanying person and recorded directly (4). Completed home accident reports are checked and coded by the trained staff at the hospital (5) and sent, usually weekly, to DPCP (6).

Each week a batch of forms is sent to the government computer center where information is punched onto paper tape for computer input (7). The original home accident reports are returned and filed at DPCP (8). The input data are checked and edited (9) before they are added to the main computer file (10).

Data can now be analyzed in a number of ways to meet the need for regular statistical information and to respond to Adhoc queries for research and other purposes (11). Two types of output are available; first a detailed list including the brief accident description for each case within the prescribed parameters (12); and secondly frequency tabulations for a single or for any pair of variables (13).

D. HOME ACCIDENTS - BASIC DEFINITIONS

The following are the basic definitions used in deciding whether an accident should be recorded by the system.

1. Accidents

They should include suspected child over-doses but exclude:

a) deliberately self-inflicted injuries/suspect suicides;

b) injuries resulting from physical attacks by other persons, animals or insects.

2. Home

This comprises the building, garden/yard, driveway/paths/steps/ boundaries and should include permanent and voluntary institutions such as homes for the elderly, student halls, and where the stay is 6 months or more, residential hotels, caravans and nursing homes. The definition excludes temporary and non voluntary institutions such as hospitals, hotels, public/boarding houses, non-residential caravans and prisons.

APPENDIX C

STEPS TO FOLLOW FOR
DESIGN AND IMPLEMENTATION
OF LOCAL CURRICULUM

STEPS TO FOLLOW FOR DESIGN AND IMPLEMENTATION OF LOCAL CURRICULUM

A. INTRODUCTION

The following information should be used as guidelines only. The guidelines may assist in preventing some common pitfalls or problems. They are a result of the St. Paul experience. Each area is different and a process that works for one area may not work for another. It is vital to keep in mind though, that all those individuals or groups which will be affected by any design should be involved in the initial stages of decision making. Care must be taken at the beginning to set up a network of communication to prevent surprises and hostility and ensure commitment and enthusiasm. The decision matrix as shown in the sample on the following page is a useful tool for setting up a network.

Local curriculum design takes initiative and commitment by the participants. Anyone from the school board right down to the teachers and students who has a strong enough desire and who has identified a real need for curriculum can initiate design. Before commencing any curriculum design, consideration should be given to a preferred future with a reflection on what the future society would be like, what its values would be, both conscious and unconscious, how it would differ from the present society and what are the driving forces are within the present society which will inhibit growth towards the preferred future. This will help in identifying realistic goals for the curriculum. Another key consideration is to find support and gain approval from the proper authorities. For example: If a teacher identifies a need for curriculum design, support should be gained from other teachers, as well as the principal. Through the principal, support and approval needs to be sought from the superintendent and the school board. If it appears that the idea could be costly but also applicable to other school divisions, approval could be gained from the Department of Education for funding to assist in the financing of the design. A proposal could be submitted to the Department of Education with the assistance of the superintendent and the support of the board.

Once the decision is made to go ahead with design it is very important to have a good leader who has coordinating and facilitating skills. This person needs to have the ability to ensure that everyone is kept informed and needs are identified and fulfilled. He or she should have knowledge about the steps that need to be taken in curriculum design and have good communication skills. This person will need to ensure that a communication network which will provide constant feedback and assessment of people's feelings and ideas is set up. It should be understood that the objectives are likely to change as the project progresses. This occurs because as information is brought together, elements not considered in the initial objectives will need to be considered. At regular intervals the leader should ensure that time is spent evaluating the program and assessing the objectives.

DECISION MATRIX

NAME

(Name individuals where applicable)	POLICY APPROVAL		FUNDING		RESOURCES		DESIGN		EVALUATION		ORIENTATIONS	
	INF.*	INV.*	INF.*	INV.*	INF.*	INV.*	INF.*	INV.*	INF.*	INV.*	INF.*	INV.*
Dept. of Education												
Board of Education												
Superintendent												
Principals												
Co-ordinator												
Steering Committee												
Design Teachers												
Pilot Teachers												
Students												
Community												

*INF. - Informed (Who needs to be informed of progress?)

*INV. - Involved (Who needs to be involved in decision making process?)

B. STEPS IN LOCAL CURRICULUM DESIGN

These steps can be adapted to meet your individual needs.

1. Clearly identify a need. This can be done by anyone with a concern by doing the following:

    a) describing a preferred future society reflecting its values and forces, which could be obtained by fulfilling this present identified need;

    b) taking an inventory of existing resources within the school division, province and country by talking to librarians, content experts and looking at compendiums of resources;

    c) assessing the students need through question and/or observation.

2. Follow regular procedures within the school division to gain approval in principle to respond to the need.

3. Set up a Steering Committee to oversee the design and implementation of the curriculum. It should be composed of:

    a) volunteer teachers;

    b) one person (existing staff member or hired person) to be responsible for the coordination of the work who has the ability to facilitate the process;

    c) optional members such as administrator, parents, students or content experts.

4. The Steering Committee should meet to discuss the following questions:

    a) orientation to the project:

        - What is the history of the idea?
        - What are the blurry spots?
        - What is the identified need?
        - What are the hopes for the future?

    b) aim of project:

        - What is the aim of the project?
        - Who agrees with the aim?
        - What needs to happen to attain the aim?
        - Where is funding available?
        - What decisions need to be made?
        - Who can make which decision?
        - What are the objectives of the project?

c) roles:

- What is the role of the committee?
- Who else needs to be involved?
- What is in it for each person?
- What is each persons commitment to the project?
- What task will each person take on?

5. All individuals and groups who were identified to play an active role, should be asked if they are interested and willing to become involved. Their concerns and recommendations should be recorded and responded to.

   Adopting a new approach is not easy and many teachers will be uncomfortable at first because it is like asking them to voluntarily reduce their level of competency and personal security. The design teachers need time to become acquainted with the idea and to each other. It is important to keep the dialogue open and try to respond to needs and concerns.

6. All the people who may be affected by the plan should be informed. Their concerns and recommendation should be recorded and questions answered (eg. parents, support staff, students).

7. The Steering Committee should review the responses and amend the plan where necessary. The individuals should again be informed and clarify their interest. This process is time consuming but of great importance. This process must continue until the general plan is clear.

8. Set up a communications network using a decision matrix to ensure everyone is kept informed. This should include planning for ongoing meetings in each affected school to ensure that the staff is kept up to date.

9. The Steering Committee should draw up a timeline for the project which covers the tasks to be completed:

   a) gather resources;

   b) find content experts;

   c) find appropriate guidelines for curriculum design or write ones specific to the topic;

   d) plan the type of evaluation to be done;

   e) find funding for substitutes etc.;

   f) orientation for designing teachers;

   g) orientation for pilot teachers (non design teachers who will test the curriculum).

10. The orientation for the design teachers should explain that the teachers may be expected to:

    a) design curriculum following guidelines and using resources;

    b) have the curriculum validated for content. (may be done by coordinator or Steering Committee);

    c) meet with pilot teachers who will also be testing the curriculum;

    d) teach the curriculum;

    e) evaluate the effectiveness of the unit by testing the students;

    f) revise the curriculum.

    The evaluation process, purpose, type etc. should be explained. If an external evaluator is being used, the design teachers should meet the person to answer any questions or concerns and to have input. The design teachers must clearly understand what is expected of them (no surprises) so that they can clarify their willingness and commitment to the task.

11. The design teachers should commence the design work with the help of the coordinator and a Steering Committee member. Once design work starts, the Steering Committee may not have to meet for a while.

12. When the design work is finished, the validation process should begin. Content experts should be given a copy of the curriculum and the support resources, with clear instructions on what is being asked of them and when it should be returned.

13. The design teachers should meet again to make corrections in the content once the validation process is finished.

14. The orientation for the pilot teachers should:

    a) explain that they are expected to:

        - teach the curriculum
        - test their students
        - assist in the revision of the curriculum;

    b) give them time to study curriculum and resources and discuss them with the design teachers;

    c) clarify the pilot teachers willingness to teach and commitment to the task.

15. The curriculum should be taught and the evaluation done. The evaluation could include: student tests and parent interviews to assess the effectiveness of the curriculum. A log recording what was taught, what resources were used, the students response etc. while teaching the curriculum could be kept by the teachers to assist during the revisions.

16. The revision process includes:

    a) reviewing the test results;
    b) discussing logs and sharing classroom experiences;
    c) adding and subtracting resources;
    d) checking the scope and sequence;
    e) rewriting objectives and activities where necessary.

C. IMPLEMENTATION - POINTS TO KEEP IN MIND

By this time there should be a good climate established. All the people affected by the plan should understand the design process and have made some kind of commitment.

Once the revisions have been made a new stage of decision has been reached - implementation.

1. The Steering Committee should meet to discuss the following questions:

    a) Should the curriculum be implemented?
    b) If so who would/should be involved?
    c) What are the costs?
    d) What are the timelines?
    e) Who is responsible?

2. Problems will arise if those who will be affected are not kept informed. Ensuring that everyone understands what is to be accomplished and why it is being done is vital. People cannot become actively involved or remain involved if this is not clear. The process must be kept flexible so that individual differences can be accommodated. People must have input and feel that their input will have an effect.

3. Hold as many meeting as seems necessary to discuss questions and problems.

4. Provide inservice and workshops to explain the curriculum.

5. Insure that all levels of the School Division are involved - school board, superintendent, principals, teachers, (optional - support staff, students, parents, community.)

6. Stop and reassess the progress, make changes where necessary.

7. Ensure that adequate and timely information is available to prevent surprises.

There are numerous models available which can provide a more detailed description of an implementation process. A few are listed in the Bibliography.

D. SUMMARY

1. Steps In Design

a. Clearly identify need.

b. Get approval in principle for responding to need.

c. Set up a Steering Committee and find a coordinator.

d. Identify aim, tasks and costs of project.

e. Inform all the people needed to assist and who may be affected by the project.

f. Review all the feedback and amend plan where necessary.

g. Draw up a timeline for tasks.

h. Complete resource search and guideline development.

i. Orientation for design teachers.

j. Commence design work.

k. Validate content of curriculum and revise.

l. Orientation for pilot teachers.

m. Teach curriculum.

n. Evaluate curriculum.

o. Revise curriculum.

2. Implementation - Points To Keep In Mind

a. Identify what should be implemented, costs involved, who is responsible etc.

b. Keep everyone informed.

c. Maintain flexibility in the plan.

d. Hold meeting, workshops and inservice as needed.

e. Reassess progress and make changes where necessary.

APPENDIX D

UNIT DESIGN GUIDELINES FOR TEACHERS
REGARDING
STUDENT SAFETY EDUCATION

The materials in these guidelines were prepared jointly during the Student Safety Education Project in the County of St. Paul in the winter of 1981-82 by:

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A. THE AIM OF SAFETY EDUCATION:

Safety Education Should:

INCREASE STUDENT KNOWLEDGE AND INFLUENCE
THE DEVELOPMENT OF POSITIVE SAFETY
ATTITUDES AND BEHAVIOR

B. PURPOSE OF THE GUIDELINES

These Guidelines were designed to provide a step by step process for designing units on safety education. They may be used by teachers to accomplish the overall aim of safety education. It is suggested that safety education should be integrated into existing subject areas. The units should therefore be designed considering the limitations of classroom time and also the appropriateness of fit into the subject area.

Resources which have proven to be useful for unit design are included in Appendix 1.

SUGGESTED APPROACH AND RATIONALE FOR DESIGN

A. SELECTION OF MODEL

The model selected as the basis for safety education unit design is L.W. Green's, "Health Education Planning, A Diagnostic Approach". This model was selected because it suggests a different approach from the traditional do's and don'ts presentation of safety education.

B. DISTINCTIVE FEATURES OF THE MODEL:

1. It focuses on the determinants of behavior (attitudes, reinforcement factors, skills, knowledge).

   The value of a focus on these determinants is due to the fact that safety behavior involves much more than knowing the rules of safety. To have an impact on behavior, these determinants of behavior should be considered in the learning process.

2. It suggests the design and administration of a pre-teaching assessment. The purpose of the pre teaching assessment is:

   a) To create interest amongst the children in the subject of safety;

   b) To help teachers identify safety needs of the class;

c) To help teachers tailor his/her educational intervention to these needs.

STEPS IN UNIT DEVELOPMENT

A. SAFETY UNIT TOPIC SELECTION

The safety topic selection should be based on an assessment of need.

1. Points To Consider When Assessing Need

   a. Safety curriculum already available.

   b. Provincial and local accident statistics.

   c. Teacher assessment of student safety behavior.

   d. School accident records.

B. INTEGRATION OF SAFETY INTO CURRICULUM

1. Units should be designed with integration in mind.

2. Chose a subject area into which an emphasis on safety is appropriate and where the subject is flexible enough for this inclusion.

3. Safety can be integrated successfully into health, science, language arts, social studies, physical education, home economics, industrial arts, math, art, law, occupation etc.

C. DESIGN OF SAFETY UNITS

The work sheet for unit design is found in Appendix 2.

1. Gather And Review Resource Material

   There are many agencies and government departments involved in safety education. A list of some with accompanying addresses are provided in Appendix 1. Ample time needs to be provided to gather resources and review them.

2. Points To Consider On Determinants Of Behavior In Unit Design

   a. A precise distinction between attitudes, knowledge and behavior is difficult to make since each aspect both comes from and leads to the other. This makes focusing on the determinants of behavior difficult but it is worth trying. We do know something about behavior and the following points may be of assistance for discussion and clarification. To start off with, this definition adapted from Fishbein's and Ajzen's Belief, Attitude, Intention and

Behavior may be helpful: "A safety attitude is a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to safety in a situation".

b. Elements affecting safety attitudes and behaviors include:

   i) knowledge about the safe way of handling situations;

   ii) skill in being able to do the correct method;

   iii) reinforcement factors which are pressures for or against safety. For example:

      - self concept - feeling okay about self and able to resist negative persuasion or defend safety position
      - beliefs - what is right or wrong, good or bad
      - parents, peers, teachers, media etc. positively or negatively influencing safety behavior

c. Examples of safety attitudes include:

   i) shows wisdom regarding risk taking;

   ii) displays open mindness in examining safety in a situation from more than one perspective;

   iii) practices safe behavior under pressures of time constraints and expediency;

   iv accepts responsibility for personal safety which includes the ability to resist persuasion to act unsafely;

   v) shows appreciation for how to take corrective actions in unsafe situations;

   vi) values learning about safety as a subject;

   vii) accepts responsibility for the safety of others.

3. Decide On Content

   a. Make a list of points to be included by brainstorming and looking at resources.

   b. Order the points into themes.

4. Write Objectives

   a. Write a broad overall objective for the unit expressing the purpose and what the students will learn.

   b. Where appropriate, write general behavioral objectives for the different themes identified.

c. Write specific behavioral objectives. These objectives should include areas of knowledge, skill and attitudes.

For assistance in writing objectives see Appendix 3 for examples and use a text such as Gronlund's, Stating Objectives for Classroom Instruction.

5. Write The Content And Activities

a. Identify the content to support the specific objectives.

b. The activities should cover the identified content.

c. The evaluation should cover the three domains contained within the unit planning: Cognitive, affective and psychomotor.

d. The evaluation may take place by a combination of objective tests, observation of student behavior, student feedback and/or any other locally developed techniques. For further ideas on evaluation see the tests used in the Student Safety Education Project in St. Paul in the appendices to the Evaluation Report.

For ideas on activities see Appendix 4.

6. List The Resources Opposite The Appropriate Activities

a. Put the appropriate resources opposite the activities.

b. Make a master list of all the resources with the name address and phone number of the source and put it at the beginning of the unit.

7. Design Pre-teaching Assessment

The design of this pre-teaching assessment is based on the outlined objectives of the unit. For example, one of the unit objectives in pedestrian safety might be "to recognize pedestrian road signs". This is a cognitive objective and therefore a question in the cognitive domain should be asked. This could be "describe what these road signs mean".

The use of the pre-teaching assessment precedes the covering of each of the outlined objectives. Responses to it may reveal to the teacher that only four of the five objectives need to be covered in the classroom. Three main areas of questioning are suggested as part of this pre-teaching assessment, they are:

a) Questions concerning the student's knowledge related to the safety behavior. Ask questions to discover the student's knowledge regarding the safety topic.

Example questions:
- What are some common household cleaners which should not be mixed?
- How do you approach farm animals?

b) Questions concerning the student's abilities to perform any skills related to the safety behavior. Ask questions to discover the students skills regarding the safety topic.

Example questions:

- What are the hand signals for a left hand turn on your bike? Demonstrate.
- Show me the correct way of falling.
- Show me what to do if your clothes catch on fire.

c) Questions concerning the student's attitudes related to safety behavior. Ask questions to discover the students attitudes with regard to the safety topic. Attitudes can be simply assessed by asking a "where do you" and "why do you" question.

Example Questions:

The school is in the middle of a block of buildings and is situated on a busy street. Directly across from the school, on the other side of the street is the school playing field. There is a crosswalk and light at the end of the block, but many children cross the street in the middle. There have been pedestrian accidents.

Where do you cross the street? Why do you cross the street there?

The answer to the "why" question will lead you to the expression of the attitude.

Discussion of the reasons "why you do what you do", offers an opportunity to deal with the factors contributing to the attitude, i.e., in a hurry, its easier, my friends cross there (reinforcing factors).

For younger children, the why question should be asked, but in dealing with it, the focus should be on strict adherence to the right way to do things (know safety rules) for all occasions. The element of judgement must be removed for the younger child. (e.g. They should be encouraged to cross at the crosswalk).

For older children, the focus should be on developing wise risk taking. In other words, it may be safe to cross the street in the middle, as long as you look both ways, don't dart out between cars and wait until all oncoming traffic has passed. The element of wise judgement should be developed with the older child.

CONCLUSION

Following the procedure as outlined, an increase in knowledge and the development of an attitudinal change will be achieved.

A conscious and directed approach to attitudinal change must provide a greater effect than one that is left to chance.

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It must, however, be realized that attitudinal changes occur slowly and must be reinforced by the school, in the home, among the peer group and within the community at large.

This process is but the beginning of what must become a new, more safety oriented life style.

BIBLIOGRAPHY TO THE UNIT DESIGN GUIDELINES

Fishbein, Martin, Ajzen, Icek, Belief Attitude Intention and Behavior, Addison - Wesley Publishing Company, Don Mills, Ontario, 1975.

Green, Lawrence W., et al. Health Education Planning, A Diagnostic Approach, Mayfield Publishing Company, 1980.

Grounlund, N.E., Stating Objectives for Classroom Instruction, MacMillian Publishing Co. Inc. 1978.

APPENDIX 1

RESOURCES

1. County of St. Paul Safety Units (Appendix F).

2. Playing It Safe, Red Cross Society.

   Safety Is No Accident, Red Cross Society.

3. Ideas on Safety Education/Teacher Resource Guide, Student Safety Education Project, 1982 available from the Department of Education.

4. Stating Objectives for classroom Instruction, N.E. Gronlund, MacMillian Publishing Co. Inc. (or any other book available which helps with writing objectives)

5. Health Education Planning, A Diagnostic Approach L.W. Green, M.W. Kreuter, S.G. Deeds, K.B. Partridge, John Hopkins University, Mayfield Publishing Co. 1980.

6. A Student Safety Education Project Initial Handbook #1 St Paul Student Safety Education Project, 1981, Ellie Robson, Project Designer. Available from the Alberta Safety Council.

7. Other resources on safety topics are available from other agencies involved in safety. The following is a list of a few. It is by no means exhaustive:

Canadian Red Cross Society (The)
9931 - 106 Street
Edmonton, Alberta
423-2680

Alberta Safety Council
#201, 10526 Jasper AVenue
Edmonton, Alberta
T5J 1Z7
428-7555

Alberta Motor Association
11230 - 110 Street
Edmonton, Alberta
474-8660

Department of Transportation
2nd Floor, Boardwalk Bldg.
10220B - 103 Street
Edmonton, Alberta
427-7910

Department of Energy and Natural Resources
9915 - 108 Street
Edmonton, Alberta
427-7003

Department of Recreation and Parks
10405 - 100 Avenue
Edmonton, Alberta
T5J 0A3
427-6781

Department of Labor
10808 - 99 Avenue
Edmonton, Alberta
T5K 0G2
427-3679

Workers' Health, Safety and
Compensation
5th Floor, Donsdale Place
10709 Jasper Avenue
Edmonton, Alberta
427-8943

Department of Social Services and
Community Health
Seven Street Plaza
10030 - 107 Street
Edmonton, Alberta
T5J 3E4

APPENDIX 2

FORMAT FOR UNIT DESIGN

Theme of Unit: ______________________

Broad Overall Objective ________________

Behavioral Objectives: General and Specific Objectives	Content	Suggested Activities and Approaches	Resources

APPENDIX 3

EXAMPLE OF THREE TYPES OF OBJECTIVES

Topic - Fire Safety

1. Broad Overall Objective

   The student will become familiar with fire hazards, prevention and precaution and be able to demonstrate procedures to follow in case of fire.

2. General Objective

   The student demonstrates appreciation of safe procedures when dealing with fire.

3. Specific Behavioral Objective

   a. Knowledge:
      - the student will be able to explain the impact of fire on a home.
      - the student will be able to describe several causes of fire.

   b. Skill:
      - the student will be able to demonstrate three fire prevention measures.

   c. Attitude:
      - the student will demonstrate a willingness to stop and think before taking a risk.
      - the student will show a willingness to report fire hazards.

APPENDIX 4

SUGGESTED ACTIVITIES FOR THE CLASSROOM

1. Regarding Knowledge Objectives

One activity might be to have the students assess hazards in a particular environment and think of problem solving ways to deal with them.

2. Regarding Skills Objectives

Emphasize a demonstration of the skill whenever possible, e.g. "show me the hand signals for a left turn on a bicycle".

3. Regarding Attitude Objectives

Simple assessment of attitudes will be done in the pre-teaching assessment. This will guide the teacher in regards to the attitudes which need to be addressed in the classroom. Some suggestions for classroom activities are:

a) Present the consequences of unwise risk talking in a persuasive manner. If one student has experienced an accident allow them to discuss how this has affected his/her lives. Whenever possible, highlight those children who have been accident free.

b) If unwise risk taking is being reinforced by peers, one way to deal with this is by role playing. Ask one group of children to play the role of attempting to influence another group into doing daredevil stunts. Have the other group think of ways to counter this peer pressure to conform. Have them act this out and then discuss the results.

APPENDIX F

NINE SAFETY EDUCATION UNITS
DESIGNED BY TEACHERS

TABLE OF CONTENTS FOR SAFETY EDUCATION UNITS

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INFORMATION TO TEACHERS USING THE UNITS 4

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Safety in Winter Conditions Unit for Grade Four to Grade Twelve 95

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Snowmobile Safety Unit for Grade Six to Grade Twelve 120

Motorcycle Safety Unit for Grade Eight and Grade Nine 128

UNITS ON SAFETY EDUCATION

DESIGNED BY TEACHERS

Student Safety Education Project
County of St. Paul
School Year 1981 - 1982.

PEOPLE INVOLVED IN THE DESIGN OF SAFETY UNITS

TEACHERS STEERING COMMITTEE:

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Motorcycle Safety:
Snowmobile Safety:
Small Boat Safety:

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Elk Point Elementary

Art Fuller
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School Playground Safety:

Theresa Jodoin
Mallaig Elementary

Alice Kowalczuk
Ashmont Elementary

Safety in Winter Conditions:

Debra Lastiwka
Heingburg Elementary

Rob Boyd
Elk Point Elementary

INFORMATION TO TEACHERS USING THE UNITS

A. BACKGROUND

These units are from the Student Safety Education Project piloted in the County of St. Paul. THE AIM OF THE PROJECT WAS TO INCREASE STUDENT KNOWLEDGE AND INFLUENCE THE DEVELOPMENT OF POSITIVE SAFETY ATTITUDES AND BEHAVIOR. A Steering Committee of teachers plus two project staff were formed in November, 1981 to further the overall aim of the project.

The Teacher Steering Committee decided the primary way to accomplish the project aim was through the design of safety units which would subsequently be tested in the classroom. Sub committees of teachers were formed to design the units and implement them. Other teachers (pilot) were selected to implement and test the unit in the classrooms as well.

An overall evaluation of the project was carried out to assess the usefulness of the chosen approach to safety education by testing the knowledge gain and attitude change in the students. This evaluation was done through funding from the Department of Education.

The units are to be integrated into the regular classroom activities.

B. WHY A UNIT ON SAFETY?

1. Studies show that Canada ranks third last out of 18 industrialized countries on a listing of accidental deaths of children aged one to four, and last for those aged five to 14 years (1974). These accidents are the leading cause of child mortality after one year of age and rank second only to acute infections as the cause of morbidity (poor health, disease) in childhood. Data for this latter area is very difficult to obtain, since there is not a comprehensive accident surveillance system. Better planning would be possible if one existed.

Five leading causes of death by various age groups, in Canada, 1978 are:

CAUSES	TOTALS NO.	RATE (PER 100,000) 5 - 19 YEARS
Accidents	2,165	34.2
Cancer	337	5.3
Suicide	317	5.0
Congenital Anomalies	135	2.1
Cardiovascular Diseases	94	1.5

Accident Fatalities, 1978, Canadian Safety Council, Vital Statistics Section, Statistics Canada.

2. In Spite of the high impact accidents are having on so many people's lives and the repercussions this has on the rest of society, little emphasis in research is placed on accident prevention. This may be because as Haddon (1964) states "the causes of accidents are seen by the general public as intrinsically different from those which lead to disease and are viewed in essentially non rational terms' i.e. luck, chance, 'acts of God'."* It is unfortunate the word accident tends to be viewed in this unpredictable and thus unpreventable way, because accidents are as capable of analysis, thus revealing their causes, as any other event.

Goals of basic education for Alberta which apply to safety education are as follows:

3. "Schooling, as part of education, accepts primary and distinctive responsibility for specific goals basic to the broader goals of education. Programs and activities shall be planned, taught, and evaluated on the basis of these specific goals in order that students:

    a) Acquire knowledge and develop skills, attitudes and habits which contribute to physical, mental, and social well-being;

    b) Acquire knowledge and develop skills, attitudes, and habits required to respond to the opportunities and expectations of the world of work."[2]

Acquiring safety knowledge, attitude and skills, will increase life, decrease physical, mental and social disabilities and increase confidence because of students knowing how to do things properly.

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* Haddon, W., Suchmkn, E.A., Klein, D. (Eds.): Accident Research: Methods and approaches. New York, Harper and Ron, 1964.

[2] Reprinted from the Program of Studies for Elementary Schools (Alberta Education, 1978).

C. APPROACH AND RATIONALE IN DESIGN

1. The units are based on a learning model by L.W. Green called Health Education, A Diagnostic Approach. Two distinctive features of this model are:

    a) it focuses on the determinants of behavior (attitudes, reinforcement factors, skills, knowledge);

    b) it suggests the design and administration of a pre-teaching assessment.

    This model was selected because it suggests a different approach from the traditional do's and don'ts presentation of safety education.

2. A safety attitude is a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to safety in a situation.

    a. Examples of safety attitudes include:

        i) shows wisdom regarding risk taking;

        ii) displays open mindness in examining a safety situation from more than one perspective;

        iii) practices safe behavior under pressures of time constraints and expediency;

        iv) accepts responsibility for personal safety which includes the ability to resist persuasion to act unsafely;

        v) appreciation for how to take corrective actions in unsafe situations;

        vi) values learning about safety as a subject;

        vii) accepts responsibility for the safety of others.

    b. Elements affecting attitudes and behavior include:

        i) knowledge about the safe way of handling situations;

        ii) skill in being able to do the correct method;

iii) reinforcement factors are pressures for or against safety. For Example:

- self concept - feeling okay about self and being able to resist negative persuasion or defend safety position;
- beliefs - what is right or wrong, good or bad;
- parents, peers, teachers, media etc. positively or negatively influencing safety behavior.

c. The purpose of the pre teaching assessment is to:

i) create interest amongst the children in the subject of safety;

ii) identify the safety education needs of the class by assessing the student's attitude and knowledge towards safety;

iii) assist in tailoring the educational intervention to these needs.

The questions are based on the specific objectives of the unit. Responses to the questions may reveal that only three of the four objectives need to be covered in the classroom. They should be administered verbally to the total class.

D. ACTIVITIES

1. Safety education is often considered boring. It doesn't have to be. It can in fact be fun both for the students and the teachers, bringing a fresh perspective to old curriculum.

a. The activities should be done in such a way as to give students time to practice new skills in handling experiences. The skills not only include psychomotor skills but ones which also help them with problem solving, decision making and communication.

For some information about affecting knowledge and attitudes, read the literature review, evaluation and guidelines to this project.

b. Role playing is a useful technique in practicing these skills. By setting up a situation, the student can work through the issues of risk taking and coping with peer pressure to come up with a decision.

Discussion afterwards can help the student understand why they made certain decisions and what they could have done to change the outcome if an unsafe solution was arrived at.

c. Involve the parents when possible, by informing them of the unit on safety and the importance of their role in reinforcing the information and behavior. Parents should also be warned of the activities which the students will be bringing home for them to do together.

d. Final evaluation of the students knowledge and attitudes can be done both formally and informally. Many of the activities by their nature are also an evaluation of the students skill, knowledge and attitudes. It is important to keep the objective in mind as the activities are taking place. When the students have mastered the objective it is time to move onto the next one. Parents can often be a valuable resource in assessing the students safety awareness and attitudes. All or part of the tests used for the evaluation of this project can be used.

E. CHILDREN NEED TO REALIZE THE VALUE OF LEARNING HOW TO DO THINGS SAFELY

1. Children need to know what the rules are.
2. Children must understand why we have each safety rule before they can respond whole heartedly.
3. Children must take danger and the meaning of risk and injury seriously enough to realize their importance. This is not an easy concept for them to accept.
4. Children must learn very early in life that they are, in the final analysis, responsible for their own lives, their own actions, their own safety.
5. Children should realize the importance of taking some responsibility for other peoples safety.

HOUSEHOLD POISONS SAFETY UNIT

FOR EARLY CHILDHOOD SERVICES TO GRADE THREE

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RESOURCES FOR THE SAFETY UNIT ON HOUSEHOLD POISONS

1. Public Relations Department
Northwestern Utilities Limited
10040 - 104th Street, 6th Floor
Edmonton, Alberta
420-7211

Does Your Nose Know? - Pamphlet

2. Health and Welfare Canada
#30, 9912 - 106th Street
Edmonton, Alberta
420-2625

The Dangerous Equations - Pamphlet

Food Poisoning - Pamphlet

3. Health Promotion and Information Branch
Ontario Ministry of Health
9th Floor, Hepburn Block
Queen's Park
Toronto, Ontario
M7A 1S2
416-965-3101

Accidental Poisoning - How To Poison-Proof Your Home - Booklet

4. Consumer Services
Consumer and Corporate Affairs Canada
10225 - 100 Avenue
Edmonton, Alberta
T5J 0A1
420-2481

Home Safe Home - Kit
- Teacher's Guide
- Signs of Danger Filmstrip and Cassette
- Signs of Danger Student Activity Material
- 6 Activity Sheets
- Explosive Poster
- Fact Sheets (check list, poison, flammable, corrosive)

5. Alberta Lung Association
10618 - 124th Street
Edmonton, Alberta
T5N 3X4

The Facts About Your Lungs - Pamphlet
- Common Respiratory Allergies
- Dust Diseases

Lung Hazards on the Job - Pamphlet
- Fire Fighting
- Auto Repair
- Petrochemicals
- Silicosis
- Irritant Gases

Farmer's Lung - The Facts About Your Lungs - Pamphlet

Canadian Lung Association Task Force Report On The Health of Grain Workers - Pamphlet

6. Alberta Social Services and Community Health
Seventh Street Plaza
10030 - 107th Street
Edmonton, Alberta
T5J 3E4
427-0690

Keep Your Home Safe From Poisonings - Flier

First-Aid Treatment For Poisoning - Card

7. Farm Safety Poster Contest - 1979
Alberta Workers' Health, Safety and Compensation
Farm Safety Program
10709 Jasper Avenue
Edmonton, Alberta
T5J 3N3
427-8943

Farm Safety - Coloring Books

Beware Of These Deadly Gases - Pamphlet

8. Safety Supply Canada Co.
6120 - 99th Street
Edmonton, Alberta
436-1310

Counterdoses For The Home - Flier
(Also Available From Farm Safety Program)

9. The Alberta Pharmaceutical Association - And Your Local Pharmacist
10615 - 124 Street
Edmonton, Alberta
488-8152

Poison Proofing Of Your Home

10. Superintendent of Documents
U.S. Government Printing Office
Washington, D.C.
20402

A Guide To Teaching Poison Prevention In Kindergartens and Primary Grades,
Stock # 43.C76 3:8 P.75/2

Discussion Game - "Just Suppose"

11. Central Alberta Media Service
2017 Brentwood Blvd.
Sherwood Park, Alberta
T8A 0Y2
464-5540 or Toll Free 1-800-222-6510

Film: Safety Is No Accident

12. Red Cross Society
9931 - 106 Street
Edmonton, Alberta
T5K 1E2
423-2680

Safety Is No Accident - Manual

13. Visual Education Center
75 Horner Avenue
Toronto, Ontario
M8Z 4X5
416-252-5907

Survival Skill Kit: Series I Survival Vocabulary, Pied Piper Production.
- Household danger words
- Filmstrip and cassett
- Teacher guide

LOCAL ADVISORY COMMITTEE

Meet with your local advisory committee to discuss the possibility of doing a unit on poisons. If there is an interest, explain what could be covered and the importance of home follow up. Send a letter home with all children to explain the unit to parents to ensure that all parents are aware of their involvement.

The following is a list of resources and topics which the committee may want to utilize in their parent program.

A. RESOURCES

1. Farm Safety Program - Occupational Health and Safety; 427-8943

   Counterdoses For The Home - (also available from:- Safety Supply Canada Co. 484-7784).

   Beware Of Deadly Gases - Pamphlet (also available from District Agriculturalist).

   Farmer's Lung - Pamphlet - (also available from Canadian Lung Association).

2. Ontario Ministry of Health (1-416-965-3101)

   How To Poison-Proof Your Home - Booklet

3. Health and Welfare Canada - 420-2481

   Food Poisoning - Pamphlet

   Dangerous Equations - Pamphlet
   (Both the above available from Consumer and Corporate Affairs Canada).

4. Access Alberta

   - Take Time Series - Accidents to Preschoolers #42 (7 minute video tape)

B. SUGGESTED TOPICS FOR SPEAKERS AND DISCUSSION

1. Food Poisoning - District Home Economist
2. Poison Proofing Your Home - Public Health Nurse
3. Treatment of Poisoning - Public Health Nurse
4. Gas In your Homes - Local Gas Co.
5. Farm Poisons - District Agriculturalist
   - Farm Safety Officer

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PRETEACHING ASSESSMENT

Teacher Note

These questions are designed to assess:

1. The students attitude towards poisons:

   Not taking a risk by not touching strange objects, informing an adult about unsafe situations, taking corrective measures in an unsafe situation and learning about poison safety etc.

2. The students knowledge about poisons:

   What a poison is, different kinds of poisons, effects of poisons, treatment of poisoning, hazardous symbols and locations of poisons in the home.

3. Knowledge and attitude questions:

   a. Do you always ask your mother if you can play with bottles she uses to clean with? Why or why not? Should you or do you think its important to ask your mother if you can play with .... (Examples: - cleaners, make-up).

   b. What would you do if you found someone who was playing under the sink; in the medicine cabinet; under bathroom sink; in the garage; in your mother's make-up: etc.

   c. If you saw someone (Example: - younger sibling) playing with a grown-up's purse, would you take it away from them? Why or why not?

   d. Do you know what a poison is?

   e. What are the different kinds of poisons?

   f. Do you know what would happen if you were to swallow poison?

   g. Do you know what would happen if you were to inhale (breathe) poison?

   h. Do you know what would happen if you had poison on your skin?

   i. Do you know what you should do if you or someone else comes into contact with poison?

j. Using the 4 pictures of hazardous symbols, ask - Do you know what this symbol means?

k. Do you know if there are any poisons in your home?

l. If so, do you know where they are?

m. How would you feel if you were near a poison? Why?

n. Do you think it is important to learn about poisons?

Broad Overall Objective: The students will become familiar with the various types of poisons and will demonstrate an understanding of preventative procedures

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
A. Description of Poisons			
1. The student will be able to explain what a poison is.	1. Kinds of poisons: a) inhaled; - natural gas - car exhaust b) absorbed; c) ingested.	1. View filmstrip - Household Danger Words to introduce subject.	Household Danger Words In Survival Skills Kit By Pied Piper Production.
		2. Use poison and non poison kit. Have children discriminate between poisonous and non poisonous items. Make large charts of the different rooms - Kitchen, bathroom, bedroom and incorporate this with the poison kit. Have children place the poisons in the proper place.	Poison and Non Poison Kit page 25 Safety Is No Accidents. Red Cross Society.
		3. Experiments with cloth and corrosive chemicals.	Use District Home Economist.
		4. Discussion of insecticides that destroy insects. (Eg. raid, sugar bait, etc.).	Film - Safety Is No Accident, Central Alberta Media Service.
B. Affects of Poisons			
1. The student will be able to describe how poisons affect the body.	1. Effects of poisons: a) sick feeling; b) death; c) burning sensation.	1. View Film - Safety Is No Accident.	
		2. Discussion on effects of poisons. Ask if children know about anyone who has been poisoned.	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
C. Treatment of Poisons			
1. The student will be able to describe how to treat a poisoned person.	1. Treatment of poisons: a) inform adult immediately;	1. Role play treatment, eg. a child has swallowed some poison, what should you do?	First aid card. Social Services and Community Health.
D. Symbols			
1. Recognize and identify poisonous symbols.	1. What are the symbols: a) poisonous; b) corrosive; c) flammable; d) explosive.	1. View filmstrip - Signs of Danger.	Signs of Danger in Home Safe Home Kit, Consumer and Corporate Affairs Canada.
		2. Go through poison kit and locate symbols on containers.	Poison and non poison kit, page 25, Safety Is No Accident, Red Cross Society.
		3. Puzzles of hazardous symbols.	See Appendix to unit.
		4. Discrimination game - using poisonous and non-poisonous kit items, have children discriminate between the two.	
		5. Use activity sheets #2 and #3, have children match symbols with containers.	Activity Sheet #2 and #3 in Home Safe Home Kit.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
E. Poison Identification			
1. Identify poisonous substances in the home, garage and shed.	1. Kinds of poisons in home: a) labelled; b) non-labelled.	1. Discuss non-labelled, potentially poisonous substances eg. perfume, medicines, natural gas.	How to Poison Proof Your Home, Ontario Ministry of Health. Use list on last page of booklet.
	2. Locations in home: a) kitchen; b) bedroom; c) bathroom; d) garage-basement-shed.	2. Strategically place empty poisonous containers in the playhouse. Have students locate and label potentially poisonous substances in the classroom with stickers (playhouse) and remove them from the playhouse to store in a safe place.	Sticker form Home Safe Home Kit.
		3. Distribute the gas sniffers.	Natural Gas Scratch and Sniff pamphlet.
		4. Field trip in the school to furnace room to look for natural gas furnaces, and custodians room to see where poisonous products are kept.	
		5. Checklist and stickers to be sent home for parent and child to go through together. Write a letter to the parent discussing what you are doing.	Poison Safety Checklist, Playing It Safe, Activity Sheet #7, Red Cross Society. Poison Proofed Stickers, Ontario Ministry of Health.

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Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		6. Poison match-up game. Playing it Safe. Page 52, Red Cross Society.	Match up game. Playing it safe. Page 52, Red Cross Society.
		7. Locate and cut out pictures of poisonous and potentially poisonous substances and glue these on chart paper. (medicines and household poisons).	
F. Safe Habits			
1. Demonstrate safety habits with poisonous substances.	1. Responsibility for: a) self; b) others.	1. Introduce character "SNOOP THE SPYGLASS" (she's the character that stops and thinks, before doing).	See Appendix to Unit.
	2. Decision making: a) deciding on proper action to take regarding unsafe situation.	2. Using activity sheet #4, students role play the character of "SNOOP THE SPYGLASS" as she takes steps to alter the unsafe environment.	Consumer and Corporate Affairs. Home Safe Home Kit activity sheet #4.
	3. Differentiate between safe and unsafe situations in the home.	3. Discussion - the students will discuss reasons why "SNOOP THE SPYGLASS" made those particular changes in the environment.	
		Example of questioning:	
		a) What would your parents think of that bottle of poison being on the table while you eat?	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		b) Why did "SNOOP THE SPYGLASS" remove the bottle?	
		c) If you have a younger brother or sister, what could have happened while the poison was on the table?	
		d) Looking at picture #1 - Do you think this would be a good practical joke?	
		e) What do you think would happen if someone played this practical joke on "SNOOP THE SPYGLASS"?	
	4. Reinforcing Activity: Safety Certificate give to a child who demonstrates good safety habit or to the total class at the end of the unit. Reinforce children who demonstrate safe behavior and reward them.	f) How could you help "SNOOP THE SPYGLASS" if someone played this practical joke on him?	
	5. Culminating Activity Take a field trip to one of the parents "Poison Proofed" homes.		

APPENDICIES TO

HOUSEHOLD POISON UNIT

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PEDESTRIAN SAFETY UNIT

FOR EARLY CHILDHOOD SERVICES TO GRADE FOUR

RESOURCES FOR PEDESTRIAN SAFETY UNIT

1. Alberta Block Parent Association or through Local Association or the Police.
7823 - 34 Avenue
Edmonton, Alberta
Z6K 0B3
462-7602

The Block Parent - Pamphlet

The Block Parent - Sign - Classroom Instructional Size

Everyone Makes Mistakes - Flier

Sneakers Wants You To Remember - Flier

Block Parents Can Help! - Flier

Dorene and Dan "The Cautous Twins" - Flier

Sneakers Says - Flier

Block Parents Educational Kit,
- "The Music Man" - Recording
- The Block Parent Teachers' Manual
- Where do We Run? - Story Book
- Four (4) Safety Rule Posters with "Blocky"
- Twelve (12) Story Cards of "Patsy Duck" and "Mr. Fox"

Films - Meeting Strangers - Red Light Green Light
- The Cautious Twins
- What Is A Block Parent

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2. Alberta Motor Association,
Box 3500, Station D
109 Street and Kingsway Ave.,
Edmonton, Alberta
T5L 4J5
474-8620

Traffic Safety Teacher's Guide for Grades K-3 - Booklet

OTTO The Auto 10 Stories - For Teachers of Primary Grades

My Own Safety Story - An activity booklet for grades K-3

Traffic Safety Teacher's Guide for grades 4-6

Traffic Safety Education Visuals - Poster

Look All Ways Before Crossing - Poster

Be Extra Alert In Bad Weather - Poster

Cross At Corners - Poster

Bicyclists Ride On The Right With Traffic - Poster

Play Away From Traffic - Poster

Early Childhood Traffic Education: Parents' Guide For Action
Booklet 1: When I Go Outside
Booklet 2: I Listen and Look For Cars Coming
Booklet 3: How I Cross A Street
Booklet 4: Traffic Signal Lights
Booklet 5: Helping children Develop Awareness of Traffic Hazards
Booklet 6: Office's Record Book School Safety Patrol

Films - Talking Car
A Surprise For Otto
The Secret of Push Button

3. Alberta Safety Council
#210, 10536 Jasper Avenue
Edmonton, Alberta
T5J 1Z7
428-7555

Elmer The Safety Elephant - Road Safety Program

Tot Talk - Teaching Tips - Flier
- Go Play In The Traffic! No. 26 - Flier
(Also available through E.C.S. Branch, Department of Education.

Kenny Coon Organization Kit

4. Safety Branch
Alberta Transportation
2nd Floor Boardwalk
10220B - 103 Street
Edmonton, Alberta
T5J 0Y8
427-7910

Play It Safe - Poster coloring pictures

5. Central Alberta Media Service
2017 Brentwood Blvd.
Sherwood Park Alberta
T8A 0X2
464-5540 or Toll Free 1-800-222-6510

Safety On The Street and Sidewalk MP 2735
I'm No Fool As A Pedestrian MP 1685

6. Safety Kit
Michelin
McIntyre Educational Media Ltd.
30 Kelfield Street
Rexdale, Ontario
M9W 5A2

Lost and Found - Film strip, tape and poster.

7. Visual Education Center
75 Horner Avenue Unit One
Toronto, Ontario
M8Z 4X5
416-252-252-5907

Pedestrian and Bike Signs - Survival Skills, Pied Piper Productions.

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PRETEACHING ASSESSMENT

The following questions can be use as a preteaching assessment for each sub theme.

A. CROSSING THE STREET

1. Knowledge Questions

   a. What are the "see and be seen" safety rules?

   b. What would you do if you heard the following sounds: a car screeching to a halt, a horn, a scream, or a siren?

   c. How many kinds of corners do you cross on the way to school?

   d. Why is it especially important for you to look all ways and watch for turning cars?

2. Attitude Questions

   a. What would you do if your friends wanted you to Jay-walk across a busy street? Why?

   b. How many of you have been involved in a traffic accident? Why did the accident happen? How did you feel during and after the accident.

   c. Is it fun to play around parked cars?

B. TRAFFIC SIGNS, SIGNALS, MARKINGS AND CONTROLS

1. Knowledge Questions

   a. Do you know what a pedestrian is?

   b. What could happen if you didn't obey a traffic sign or signal? (On specific situations).

   c. Describe the traffic lights. Which light tells you to stop? Which light tells you to go? What does a yellow light tell you to do? If a traffic light is green but the sign says 'Don't Walk" what should you do?

2. Attitude Questions

a. How do you feel when you are on a highway and the traffic sign says to stop or the traffic signal tells you to wait? Why?

C. BE SEEN ON THE STREET

1. Knowledge Questions

a. When do you think drivers cannot see you ever though you can see them?

b. Do you know what a driver's blind spot is?

c. You want to cross a street but there are cars parked beside the crosswalk. What should you do?

d. Tell me what bad weather is like.

e. If its raining when you walk home do you have to do anything different than when it's sunny. What?

f. When the streets are slippery why do you have to have more time to cross than when they are dry?

g. Why do you need to be extra careful before crossing the street in bad weather?

h. Tell me what the difference is between day and night?

i. What are some ways of making sure drivers see you when you are walking at night? (light clothes, lights, reflection strip)

j. Give me an example of something that shines in the dark.

k. Why are drivers allowed to drive faster during the day than they are at night?

l. Do you feel as safe walking on a road at night as you do during the day?

2. Attitude Questions

a. Do you believe that drivers can always see you?

b. Do you believe that drivers can always stop when necessary?

c. Do you believe you can be seen just as easily on sunny days as on rainy days?

d. Do you believe cars can stop as fast on dry roads as wet or icy roads?

e. Do you feel as safe walking on a road at night as you do during the day?

f. Do you believe that wearing white helps drivers see you in the dark?

D. COOPERATE WITH OUR TRAFFIC SYSTEM

1. Knowledge Questions

a. Have you ever waited at a corner before crossing a street?

b. Who lets you know it's safe to cross?

c. Do you know any friends who can help you in traffic?

d. Why do we have someone at crosswalks to help us cross the street?

e. Show me how you are going to cross the street when it is safe.

2. Attitude Questions

a. Do you know what a school safety patrol is? Would you like to be one when you are older?

b. Have you ever heard someone criticize a police officer? How did that make you feel?

c. Why does a policeman sometimes do things that are unpopular?

F. STRANGERS AND BLOCK PARENTS

1. Knowledge Questions

a. Why should you not accept a ride from a stranger?

b. If you were being followed who would you ask for help?

c. Why is it important to know your address and telephone number?

d. What does this sign mean? (Hold up block parent sign)

2. Attitude Questions

a. Do some people frighten you? Why are you frightened by them? Is it good to be scared of strangers?

b. Suppose it was very cold out and you were walking to school. How would you feel if a friendly lady offered to give you a ride?

Broad Overall Objective: To help students develop knowledge, skills and attitudes needed to demonstrate behaviors that will enable them to function safely in a traffic environment.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
A. Introduction To Unit			
1. The students will be able to explain why learning about safety is important.	1. Vocabulary and meaning: a) safety; b) accidents; c) causes; d) rules.	1. Class Discussion on "What is safety?" Talk about what are accidents, why it's important to learn about how to do things safely.	
B. Crossing street and roads.			
1. The student will be able to explain the rules of crossing streets or roads.	1. Vocabulary: a) pedestrian; b) intersection; c) corner; d) crosswalk; e) jay-walking.	1. View film - I'm No Fool As A Pedestrian, Talking Car.	Film - I'm No Fool As A Pedestrian, Talking Car Alberta Motor Association.
	2. Rules: a) stop at edge and look all ways before crossing; b) watch for turning cars; c) cross at intersections; d) obey signs and signals; e) ensure that all cars stop.	2. Display Alberta Motor Association's Posters and discuss how each word in the slogan relates to a safety judgement a walker might make. Read stories pertaining to slogans.	School Traffic Safety Posters, Alberta Motor Association.
		3. Read appropriate stories from Otto the Auto Stories and Traffic Safety Guide for Teachers.	Traffic Safety Guide for Teachers, Otto the Auto Stories, Alberta Motor Association.
		4. Read How I Cross the Street.	Early Childhood Traffic, book #3, How I Cross The Street, Alberta Motor Association.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		5. Start a safety mural for the classroom with drawings representing each section of study a pedestrian safety.	
2. Student will be able to use the safe gap method for judging when it is safe to cross the street.	3. Introduce the gap method of estimating car approaches.	6. Use the Safe Gap System. In order to cross the street safely, children must have adequate time. The ability to evaluate speed and distance factors of moving vehicles must be developed. It will take the average child about seven seconds to cross a two-lane residential street. More lanes require a longer time. When approaching traffic is ten seconds or more away on a two-lane residential street, children should have a safe gap for crossing. Take the class or student groups to a quiet street near the school. While standing at a fixed point, ask students to look to their left until they see an approaching vehicle. Talk about whether it would be safe to cross the street according to how far away it is. Do the same thing for a car coming from the right. To determine whether traffic is ten seconds or more away, do this: When a vehicle passes directly in front of you, start counting to ten in one-second intervals ("one thousand one," etc. or "one brown	Safe gap system from Traffic Safety Guide for Teachers, 1981-82, Alberta Motor Association.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		puppy, two brown puppies"). When the vehicle is ten seconds away, pinpoint its location with some object along the street, such as a tree, telephone pole or house. As approaching vehicles pass this point, start counting to ten in one-second intervals. If the car passes you after ten seconds, you selected a safe crossing gap. If children can count to ten they can master the technique. Practice the procedure yourself before teaching it to children.	
3. The student will be able to identify traffic sounds.	4. Traffic Sounds: a) approaching and departing vehicles; b) starting and stopping vehicles.	7. Take students to a street corner and listen to the traffic and practice crossing the street. 8. Read I Listen And Look For Cars Coming. Start a safety scrap book using pictures from magazines or hand drawings to illustrate topics discussed. Additional material can be added following each class.	I Listen And Look For Cars Coming, Early Childhood Traffic Education booklet #2 Alberta Motor Association.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
C. Traffic signs signals, markings and controls.			
1. The student will be able to identify the different traffic signs, signals, marking and controls.	1. Introduce name and meaning of: a) traffic lights; b) stop; c) yield; d) do not cross here; e) signal corners.	1. View film strip "Pedestrian and Bike Signs".	Pedestrian and Bike Signs Pied Piper Kit, Visual Education Center.
		2. Duplicate smaller sign cards for child to color, cut out and hang on hangers as a mobile.	
		3. Play traffic safety games with painted signs to represent traffic lights and pedestrian signals and signs.	
		4. Play red light, green light, Simon says to reinforce sequence of lights, signs etc.	
		5. Coloring books.	Coloring Books - Play it Safe, Alberta Transportation. Traffic Signs Kenny Coon, Alberta Safety Council. My Own Safety Story, Alberta Motor Association.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		6. Read safety stories.	Elmer the Safety Elephant Safety Stories, Alberta Safety Council. Traffic Signal Lights, Early Childhood Traffic Education, Alberta Motor Association Traffic Safety Teachers Guide, Alberta Motor Association.
		7. View Films - A Surprise for Otto and The Secret of Push Buttons.	Film - A surprise for Otto, The secret of Push Buttons, Alberta Motor Association.
	Teach Note: This section could be used to discuss bike safety traffic signals as well.	8. View filmstrip - Elmers Road Safety Show.	Elmers Road Safety Show Alberta Safety Council.
D. Being Seen On The Street			
1. The students will be able to describe how to walk on street and roads without side walks.	1. Rule: a) Always walk facing traffic;	1. Display applicable posters. 2. Talk about why it is important to walk facing traffic.	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
2. The student will be able to explain the dangers of running out between parked cars.	b) Do not run out between parked cars;	3. Demonstrate how the vision of both pedestrian and drivers can be blocked by parked vehicles using either toy cars and people or a field trip to the parking lot and street.	
		4. Read stories from Otto The Auto.	Otto The Auto, Alberta Motor Association.
3. The student will be able to demonstrate how to retrieve a toy from the street.	c) Do not run into street after toy or play in the street.	5. Read appropriate Otto The Auto stories.	
		6. Discuss the risk involved in running into the street or playing in the street.	
4. The student will be able to describe why it is not safe to play in the street.	2. Risk Taking: a) What it is; b) Consequences.	7. Draw pictures of safe places to play and how to retrieve a ball on the class mural.	
		8. Talk about the consequences involved in risk taking.	
		9. Show Film - Safety on the Street and Sidewalk.	Safety on the Street and Sidewalk MP 2735, Central Alberta Media Services.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
5. The students will be able to describe various weather conditions, including rain, snow, sleet, fog, hail, and wind which affect traffic.	5. Why driving and walking becomes more difficult during inclement weather: a) slippery; b) visibility reduced; c) bulky clothing restricting movement and seeing.	10. Discuss all dangers inherent in driving and walking in conditions of adverse weather. e.g. rain, snow, icy streets, etc. 11. Display posters: "Be Extra Alert In Bad Weather". Discuss poster illustration. Identify items pictures that are used to help drivers in bad weather, (windshield wipers, rear view mirror, etc.).	School Traffic Safety Posters - Alberta Motor Association.
6. The students will be able to identify at least one reason why alertness is required in each type of weather condition.	6. Vocabulary: a) rain; b) sleet; c) dry; d) slippery; e) bad; f) alert; g) snow; h) wind; i) wet; j) cold; k) warm; m) absorb.	12. Draw a poster showing "How I Am Alert In Bad Weather". 13. Read - Stories in Traffic Safety Teachers Guide.	Traffic Safety Teacher's Guide, Early Childhood to Grade Three, Alberta Motor Association.
7. The students will be able to relate specific behaviors that will help them stay safe when walking in bad weather.	7. Rule: a) wear bright colored clothing in bad weather; b) be extra careful on the streets.	14. Read - Otto The Auto Stories.	Otto The Auto Stories, Alberta Motor Association.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
8. Students should be able to explain why it is important for drivers to see them.	8. Darkness doubles the danger. Rules: a) Wear white at night (or after dark).	15. Display poster. 16. Crayon a scene, pressing heavily on the crayon. Wash over the pictures with India Ink to simulate darkness. 17. Draw a picture showing "I wear white after dark" or "I wear white at night."	School Traffic Safety Posters, Alberta Motor Association. Otto The Auto Stories, Alberta Motor Association. Traffic Safety Teacher's Guide, Early Childhood to Grade Three, Alberta Motor Association.
9. Students should be able to identify differences between day and night.	9. Vocabulary: a) bright; b) light; c) dark; d) dusk; e) dawn; f) retro-reflective.	18. Look up each word in the dictionary reading the definition. 19. Bring in samples of retro-reflective materials. 20. Read - Otto The Auto Stories.	
10. State reason for wearing something retro-reflective when it's dark.	10. Retro-reflective material reflects light directly back to the source from any angle.	21. Have children draw self-portraits of themselves walking after dark. Provide dark sheets of construction paper, white chalk or crayons, and light colored material scraps - Youngsters can make a collage, dressing their portraits with cloth scraps.	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
E. Cooperate with our traffic system.			
1. The students will be able to identify those people who can help in traffic situations.	1. Vocabulary: a) traffic; b) policeman; c) safety patrol; d) help; e) co-operate; f) rules.	1. Invite a local police officer to come into talk to the class (prepare a lot of questions beforehand).	
		2. Find stories and activities in Traffic Safety, Teacher Resource Guide and Otto The Auto.	Otto the Auto, Traffic Safety Teacher Resource Guide, Alberta Motor Association.
		3. Role Play: Using a pretend intersection or corner on the floor using masking tape. a) crossing the street; b) not understanding a sign; c) being lost.	
		4. Have the student memorize their phone and address and parents first names.	
		5. View the filmstrip Lost and Found use poster for discussion.	Lost and Found. Michelin Kit.
		6. Have students draw a map or write an essay on the safe way for them to get to school.	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
F. Strangers and Block Parents			
1. The student shall distinguish between casual contact and more intimate contact in situations dealing with strangers and/or acquaintances.	1. Children must be taught that getting into a car with any stranger, or even with a casual acquaintance, is to be strictly avoided, and for excellent reasons.	1. Using a puppet ask the children the following questions: a) Is it alright to accept a ride - from your friend's? - from your father? - from your mother? - from a stranger? b) Is it safe to get into a car with someone just because you think you've seen him before? c) If it is pouring rain and you missed the school bus, isn't it alright to get into a nice dry car with someone going your way, so you won't catch a cold? * Give children a chance to ask similar questions using a puppet.	Films - "Meeting Strangers", Red Light, Green Light, "The Cautions Twins", "What is "Block Parent"?" Alberta Block Parent, Advisory Committee. Local Police Department or Royal Canadian Mounted Police.
2. The student will be able to explain what a block parent is.	2. Block Parents.	2. Use ideas, techniques, and resources from the Block Parents Educational Kit. Begin by using page 12-16.	Block Parent Education Kit, Alberta Block Parent Association.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		3. Conduct class discussions dealing with child molesting which includes the definition of a child molester. The following facts are worthy of consideration: a) child molesters may come from any economic level in society and may be young, middle-aged, or elderly; male or female; b) a molester is often known to the child; c) child molesters may use tricks to entice or force their victims to go with them.	Block Parents Educational Kit, Block Parent Association and City of Edmonton Book, Never Talk To Strangers.
		4. In emergency situations find a trusted adult or a block parent home in order to receive immediate help.	
		5. Role playing eg. lost child and block parent.	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		6. Safety Rules: a) never hitchhike or accept a ride from a stranger; b) never take candy, money or gifts from a stranger; c) never invite strangers into the home when alone; d) never stand near a car when giving a stranger directions; e) never play in empty or deserted buildings; f) never be lured into a house washroom; g) Never be lured into isolated areas.	
G. Final Evaluation	1. Review each of the sub themes.	1. Use a safety review in Traffic Safety Teacher's Guide. 2. Have the children create their own safety story. eg. Once upon a time a bear came out of the woods and there was a street.	Traffic Safety Teacher's Guide, Alberta Motor Association.

FIRE SAFETY UNIT

FOR GRADE ONE TO GRADE SIX

1. Resource Information Service
Energy and Natural Resources
9915 - 108 Street
14th Floor, S. Tower
Edmonton, Alberta
T5K 2C9
427-7003

Keep Our Forests Clean and Green - Paper Poster

Bertie Beaver - Coloring Book

2. Edmonton Fire Department
c/o City of Edmonton
10221 - 107 Street
Edmonton, Alberta
T5J 1K1

Fire and Fire Safety - Kit
  - Teacher Guide
  - Smoke Detector
  - Octopus Plug

3. Alberta Safety Council
#210, 10526 Jasper Avenue
Edmonton, Alberta
T5J 1Z7
428-7555

Elmer The Safety Elephant - Teacher Guide

4. Alberta Labour
Fire Prevention Branch
7th Floor, IBM Building
10808 - 99 Avenue
Edmonton, Alberta
T5K 0G2
427-8392

Learn Not To Burn, Curriculum Guide, Level I and II from the National Fire Protection Association.

Fire Prevention - Pamphlet

In A Fire Seconds Count - Pamphlet
1975 National Fire Protection Association
470 Atlantic Avenue
Boston, Mass. 02210

To give you ..... Time To Escape - Pamphlet

Arrest Arson - Crime Prevention Program - Pamphlet

Sixty Ways To Prevent Fire In Your Home - Pamphlet
Insurance Bureau of Canada
10080 Jasper Avenue
Edmonton, Alberta
T5J 1V9

Fire and Smoke Detection In Residential Buildings - Pamphlet

5. Consumer Services
Consumer and Corporate Affairs Canada
10225 - 100 Avenue
Edmonton, Alberta
T5J 0A1
420-2481

Carelessness and Fabric Fires - Pamphlet

Spray Cans Bombs In Your Home - Pamphlet

6. Fire Prevention Canada (Fiprecan) Association 1590
7 Liverpool Court
Ottawa, Ontario
K1E 4L2
613-749-8200

The Old Lady Says: "Make Your Home Fire Safe" - Pamphlet

Fire Safety Hints - Pamphlet

Safety Tips For The Warmer Seasons - Pamphlet

N.B. (Also may be available from Fire Protection Branch)

7. Central Alberta Media Service
2017 Brentwood Blvd.
Sherwood Park, Alberta
T8A 0X2
464-5540 or Toll Free 1-800--222-6510

MP1689	*Donald's Fire Survival Plan*
MP1688	*I'm No Fool With Fire*
MP1680	*Hot Stuff*
MP2721	*Fire Safety with Harv and Marv*
MP0827	*Firemen Today*
MP3184	*Heather Becomes a Firefighter*
MP0214	*Community Helpers: Firefighters*
MP3184	*Harm Hides At Home*

Films also available from
Alberta Film Library
7th Floor, HM Building
10808 - 99 Avenue
Edmonton, Alberta
T5K 0G2
Phone: 427-8392

8. Dr. Chas. A. Juneway,
Childhealth Center,
Newfoundland Drive, St. John's
Newfoundland, A1A 1Z8

Protect Someone You Love - Booklet

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9. Panda Children's Records
Connoisseru Record Corporation
160 Passaic Avenue
Kearney N.J.

Aesop's Fables - Record, Pan-3011

PRETEACHING ASSESSMENT

Teacher Note

The preteaching assessment should evaluate the students knowledge and attitudes on the following:

1. Fire Drill Procedures.

2. Understanding why these procedures are used.

3. Understanding the inherent danger of fire.

4. Knowledge and Attitude Questions

   a. Why do we have fire drills? Do you think they are fun? A bother?

   b. Why should we learn safety rules? Does it make any difference to what you do?

   c. Do you like fires?

   d. Have you ever seen anyone playing with matches? What did you do? Do you play with matches?

   e. When you are home alone, do you think about what it would be like if a fire broke out? What would you do?

   f. Have you ever seen a fire? What burned? What did people do? What would you do if there was a big fire next door? Why?

   g. Has your family talked about what you would do if there was a fire in your home? Do you have a plan of escape? Can you follow it - without Mom and Dad? What are you supposed to do when you get outside? Why?

   h. Have you talked about fire hazards with your family and done an inspection of your home for hazards?

   i. What would you do if your friends are playing with matches and they want you to play too? Why? How do you feel? Why?

j. Do you like to play with fire at bonfires?

k. How do you feel when your marshmallow catches on fire? Is it fun? Scary?

Broad Overall Objective: The Student Will Become Familiar With Fire Hazards, Prevention, Precaution And Be Able To Demonstrate Procedures to Follow in Case of Fire.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
A. Pre Teaching Objective			
1. To create interest among the children in the subject of fire safety.		1. In conjunction with the principal, plan a mock fire situation and drill to coincide with the time that you intend to start your first class related to Fire Safety. Be sure to arrange for this to happen before you start classroom activities.	Principal Teacher Note: Use some of the pamphlets as handouts for the students to take home. Some of them are listed in the resource column.
		2. When class reassembles, do orally the preteaching assessment.	
B. The value of thinking "fire safety" and to reinforcing present positive attitude.			
1. The student will be able to illustrate the impact of fire.	1. Impact Of Fire: a) Most fire damage and pain could be prevented;	1. Introduce the coloring book and the character Bertie Beaver.	Bertie Beaver, Coloring Book, Alberta Energy and Natural Resources.
	b) Fire should be prevented because it causes loss of: - life; - money; - personal possessions - time; - wildlife; - resources.	2. Make a set of posters to illustrate losses caused by fire	Safety Is No Accident, Red Cross Society, page 35 activity #1. Poster #12 Safety Is No Accident, Red Cross Society.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		3. View Film - Harv. and Marv.	Film - Harv. and Marv. MP 2721 Central Alberta Media also available from Alberta Labour Film Library.
2. The student will be able to describe several causes of fire.	2. Causes and Prevention a) Most home fires can be prevented by inspection for hazards and correcting them.	4. Home, fire, farm checklist, have each student take one home and make a check with his parent's help.	Sixty Ways to Prevent Fires, Insurance Bureau of Canada. The Old Lady Says Make Your Home Safe, Fiprecan. Home Fire Prevention Inspection Check List Learn not to Burn Curriculum page 21-24.
	3. Hazards: a) Accumulated rubbish; b) Frayed and overloaded cords and circuits; c) Careless smoking habits; d) Improperly stored matches; e) Oil, wood, gas stoves; f) Indoor use and storage of, and improper disposal of aerosols, gasoline, solvents, cleaning agents.	5. A skit to show causes and prevention.	
		6. Puppetry using Bertie Beaver.	
		7. Follow lesson number 1 in Playing It Safe.	Playing It Safe Red Cross Society, Lesson 1 page 66 and 67, 70.
		8. View Film - Harm Hides At Home.	Film - Harm Hides At Home MP 3184, Central Alberta Media Services.
		9. Gather news clippings about recent fires and determine the causes (Language Arts).	Fire Safety Hints, The Old Lady Says, Fire Prevention Canada Association.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		10. Anticipate and list seasonal fire hazards. Divide a large sheet into 4 areas and make a wall size chart illustrating something in each season.	Posters from Red Cross in Safety Is No Accident, Red Cross Society.
3. The student will be able to describe fire preventive measures.	Preventive Measures a) Remove from the property all accumulated rubbish in attics, closets, basements, garages, yards; b) Never use frayed or worn cords; c) Avoid the "octopus"; d) Do not empty freshly used ash trays into the garbage; e) Check for cigarette butts at bedtime or before everyone leaves the house; f) Keep matches in closed tins where children cannot reach them;	11. View Film Fire, Prevention in the Home.	Fire Prevention In the Home, Fire and the Witch, Alberta Labor Film Library.
		12. Fire safety rules - illustrate on roll of brown paper to show as a film in a box theatre.	Red Cross Poster Playing It Safe, Red Cross Society.
		13. Fire Lesson 1, Playing It Safe.	Playing It Safe Red Cross Society 1979.
		14. Fire Safety Rules page 39, Safety Is No Accident.	Safety Is No Accident Instructors Guide Red Cross Society.
		15. Read Story from Protect Someone You Love.	Protect Someone You Love (Pamphlet) Dr. Chas. A. Juneway, Child Health Center.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
	g) Never leave an electric stove turned on a wood oil or gas fires burning; h) Extinguish barbecue or cooking fires in yard before leaving.		Safety Tips for the Warmer Seasons Fire Prevention Canada Association
	Teacher Note: Give special emphasis to the problem of using barbeques on patios, etc. and the length of time required for the briquettes to burn out after cooking is done.		
	i) Be sure curtains, towels etc. are away from heat sources.	16. View Film - I'm No Fool With Fire.	Film - I'm No Fool With Fire. Walt Disney Extension Library. University of Alberta also available from Alberta Labor Film Library.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
4. The students will demonstrate a willingness to stop and think before taking a risk	5. Risk Taking a) a consideration of the element of "risk" taking behavior and how it varies when: - alone - with peers - with parents b) merits of alternatives; c) possible consequences; d) "lesser of 2 evils" idea.	17. Discussion: How can we handle peer pressure etc.? Should parents have to watch their children all the time? Why do you do things you know are wrong or dangerous? How about "calculated" risks? 18. Role playing showing risky situations and peer pressure (eg. playing with matches, starting a fire in a garbage can etc.) 19. Role play a house fire when: a) Parents and children are home. b) Only children are home and 1 child wants to go back in house for a special object.	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
C. Appreciation of the fact that fire can be a good friend if treated like one			
1. The student will be able to describe the history of man's use of fire.	1. History of Fire.	1. Lesson 1 (Language Arts) Fire and Fire Safety. 2. View film - Sparky versus The Snat.	Fire and Fire Safety Grade II Edmonton Fire Department (1980) Film - Alberta Energy and Natural Resources Alberta Forest Services Sparky versus The Snat. Also available from Alberta Labor Film Library.
2. Student identify uses of fire.	2. Why We need Fire. How we use fire.	3. Read Fire.	Fire Ladybird Series by James Webster.
3. The student will be able to build and light a fire with appropriate supervision.	3. How to make a campfire. How to light a campfire.	4. Build and light a campfire.	The Camper's Dirty Hand Book pamphlet.
4. The student will be able to describe the difference between a controlled and uncontrolled fire.	4. Controlled and uncontrolled fires.		

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
5. The student will be able to describe firefighting methods.	5. Firefighting Methods a) Bucket brigade; b) Fire guards; c) Fire stations, engines, hydrants.	5. Visit the local fire station	
		6. Role playing Fire Fighting Methods	
		7. Puppetry	
		8. View one of the films	Film - Firemen 370000, Community Helpers: Firefighters MP 214, Firemen Today MP 827, Heather Becomes a Firefighter MP 3184, Central Alberta Media Services.
6. The student will be able to explain the four elements of a fire.	6. Four Elements Of A Fire Fire Tetrahedron	9. Draw a fire tetrahedron and correctly name four elements necessary for a fire (Art Integration).	See page 4 Firesafety Information Learn Not To Burn Curriculum.
	air fuel	10. Students explain orally why it is necessary for all four elements to be present in order for a fire to start (Language Arts).	
	uninhibited chain reaction heat	11. Fire needs heat, fuel, oxygen and an uninhibited chain reaction to burn (Science).	Safety Is No Accident Instruction Guide page 36 Red Cross Society.
		12. Conduct experiments on the physical and chemical principals of fire (Science).	Booklets - Educational Guide for Teachers of Early Childhood to Grade Twelve, page 15.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
			Fire Safety, Early Childhood to Grade Twelve and Fire Safety, Grades Four to Six, Alberta Safety Council.
C. Information for survival in case a fire breaks out.			
1. Students will be able to describe what alerts people to fire in their homes.	1. Fire Detection Fire Alerts a) mechanical equipment; b) the senses.	1. Look at the smoke detector from the kit. Explain its function to the class and demonstrate to them how it works (Teacher activity) (Science) Teacher explain heat detectors, automatic sprinklers.	Multi-media kit Fire and Fire Safety Edmonton Fire Department 1980. Local phone book Fire and Smoke Detection in Residential Buildings Alberta Labor pamphlet.
2. Students will be able to demonstrate method for extinguishing clothing fires.	2. Procedures For Responding To fires: In Homes, Schools Community	1. Practice stop drop and roll method practice wrapping partner in a blanket.	See behavior 2 in Learn Not To Burn Curriculum.
	a) quick and efficient way to extinguish burning clothing;	2. View film Donald's Fire Survival Plan.	Film - Donald's Fire Survival Plan MP 1689, Central Alberta Motor Services, also available from Alberta Labor Film Library.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
3. Students will be able to explain reason for stop drop and roll method.	b) Reason for stop, drop, roll method opposed to running or taking burning clothing off. (include exceptions)	3. Discuss reason for stop drop and roll method.	
4. The student will be able to explain the procedure for evacuation.	c) Need for orderly action in evacuating any burning building - knowledge of routes and alternatives; - reason for moving in an orderly way, dangers of falling in a crowd; - the necessity of crawling low in smoke.	5. "Walk through" fire drills as applicable from home room, hall, gymnasium, washroom. 6. Map escape routes for home (alternatives) Mark evacuation routes with red arrows (school and home). 7. View Films - In case of Fire, Fire - Two Ways Out. 8. Discuss the need for orderly action in evacuating any burning building.	Film - In Case of Fire PHT 344 (Health and Social Services Catalogue). Operation EDITH Springfield Department of Public health and Safety In A Fire Seconds Count, Alberta Labor Fire Prevention Branch. Film - Fire - Two Ways Out, Baby Sitter's Course, Alberta Safety Council. Also available form Alberta Labor Film Library. Playing It Safe, Red Cross Society Time to Escape, Alberta Labor Fire Prevention Branch.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
5. Students will describe the location and proper use of fire extinguishers	3. Fire extinguishers: a) in school; b) in homes (commercial and homemade); c) in buses.	9. Look at fire extinguishers and stress the importance of proper use. 10. They are best used by adults. 11. The dangers of the chemicals inside cannister types. 12. Dangers of fire hoses when water pressure is turned on. Illustrate this with a small length of lab hose and a bucket. 13. Discuss emergency fire fighting methods and equipment and selective use of: a) baking soda; b) wet rags; c) dirt; d) flour; e) pan lid; f) water.	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
D. Awareness of the individuals responsibility for own safety.			
1. The student will be able to demonstrate procedure for reporting fires.	1. Procedures For Own Safety a) the correct procedure for reporting fire: - at home; - at school; - on play grounds.	1. Have students look up phone number of fire department. Make a card to hang by phone with fire numbers. This card is for reporting fires in other people's homes. Using toy or pretend phone, role play the phoning in of a call to fire dept. Stress the importance of getting out safely and phoning from the nearest available home.	Local Fire Department
		2. Look at the school fire alarm box.	
	b) The possible reactions of people when they are confronted by fire. The technique of "taking a survey" and looking at the results.	3. Take a survey to see if students think it's best to run or hide if there's a fire. Graph results (Math integration).	Learn Not to Burn Curriculum.
		4. View Film: I'm No Fool With Fire.	Film - I'M No Fool With Fire M.P. 1688 Central Alberta Media Services also available from Alberta Labor Film Library
		5. Explain the reasons for a fire drill and the procedures to follow.	Safety Is No Accident Red Cross Society

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		6. Explain the different signals used in a fire drill.	
		7. Practice the route to take to evacuate a building as well as an alternate route.	
		8. Point out the location of fire safety equipment.	
		9. Discuss areas for improvements after a drill has been practiced.	
		10. Emphasize importance of reporting fire, heat or smoke conditions to an adult, if possible.	
2. The student will be aware of ramifications of a false alarm	2. An understanding that it is very wrong to turn in a false alarm: a) to fire dept. in causing extra work; b) to others, in taking fire dept. when others might need it; c) to self because the fire dept. might not come when you need them; d) to everyone along the route becaused the rapidly moving fire equipment is a potential danger.	11. (Teacher) Tell the story of the boy who cried "wolf" and play the recording.	Aesop's Fables Local Library.
		12. Role play police catching small boy who has turned in false alarm a) taking him to parents b) taking him to police station.	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
E. The hazards of misusing combustible and flammable materials.			
1. Student will be able to identify sources of ignition.	1. Sources of Ignition: a) matches; b) candles; c) lighters d) cigarettes; e) electricity; f) lightning; g) man made.	1. Lesson 2, 3, 4, 6, and 7 and Lesson 8 (optional Science Integration in Fire and Fire Safety or Learn Not To Burn.	Fire and Fire Safety. Edmonton Fire Department. Learn Not To Burn curriculum. Behavioral objective 11, 12, 13, 14, 15 and 16
		2. View Film - Hot Stuff.	Film - Hot Stuff MP 1680, Central Alberta Media Services also available from Alberta Labor Film Library.
	2. Combustible material.	3. Demonstrate and discuss different kinds of materials and their rates of ignition and combustion. a) material under pressure; b) gasoline.	Spray Cans Bombs in Your Home Consumer and Corporate Affairs Canada. Facts About Gasoline Fipreean Association Ottawa Canada.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
2. Student will be able to identify the degree of combustibility of various flammable materials.	3. Flammable Material: a) Definition; b) Kinds of materials and rate of ignition and combustion: - paper - wood-kinds, size - cloth - flammability differences - cooking oils - grease - household and other - spray cans - gasoline - cleaning fluids - solvents and paint - thinners - invisible dangers of vapors	4. Have the students make a display showing the different types of fabrics, and label each as to its flammability. Or do this as a discussion only.	
		5. View Film - Your Clothing Can Burn.	Film - Your Clothing Can Burn PHT 424, Health Social Services Film Catalogue, also available from Alberta Labor Film Library.
		6. Demonstrate, using pieces of fabrics, their flammability.	
		7. Discuss the clothing the students are wearing, as well as common fabrics found in the home and in the schools.	
		8. Discuss with the students what to do if their clothes or other fabrics catch fire.	Facts and Fabrics Carelessness and Fabric Fires Consumer and Corporate Affairs Canada.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
G. Awareness that burns need immediate attention, and an understanding of the possible first aid procedures.			
1. To learn simple basic treatment for a burn.	1. A burn must be "cooled" as quickly as possible. 2. Anything (clothing) stuck on burned skin must not be pulled off. 3. A burned area is very tender. It needs protection from a) germs; b) touch.	1. Use washable red color to indicate a "burn". Show how to treat it. Use either a doll or a child.	*St. John's Ambulance Handbook* No. 38 sheet *Elmer the Elephant* Alberta Safety Council Behavioral Objective Number 7. *Learn Not To Burn* Curriculum
H. Reinforcing culminating activity		1. Prepare a poster illustrating some phase of this project.	
		2. Read in the Ginn readers - "The Fire Fighters" "Katy's Tuilt"	*Friend Far and Near*, Grade Three, Ginn Readers

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		3. Read in Reader's Digest - "The Dog Who Walked Through Fire" How to respond in a fire.	Readers Digest, May 1982.
		4. View filmstrips - Flashy the Fire Bug.	Film - Fashy The Fire Bug, National Film Board.

SCHOOL PLAYGROUND SAFETY UNIT

FOR EARLY CHILDHOOD TO GRADE SIX

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RESOURCES FOR SCHOOL PLAYGROUND UNIT

1. Canada Safety Council
Alberta Safety Council
#201, 10526 Jasper Avenue
Edmonton, Alberta
T5J 1Z7
Phone: 428-7555

Elmer The Safety Elephant Visits The Playground (Instructor's Guide) Early Childhood to Grade Three

2. Canadian Red Cross Society
9931 - 106 Street
Edmonton, Alberta
T5K 1E2
Phone: 423-2680

Playing It Safe - Resource Guide
- Teacher Guide
- Activity Sheets

3. Alberta Motor Association
109 Street and Kingsway Avenue
Edmonton, Alberta
Phone: 474-8620

Otto The Auto - 10 stories from the American Motor Association

4. Central Alberta Media Service
2017 Brentwood Blvd.
Sherwood Park, Alberta
T8A 0X2
Phone: 464-5540 or Toll Free 1-800-222-6510

Films - *Playground Safety* - As simple as A.B.C.
- *Safety on the Playground*

5. Michelin
McIntyre Educational Media Ltd.
30 Kelfield Street
Rexdale, Ontario
M9W 5A2

Play It Safe - Safety Kit
- Film Strip and Cassette
- Teacher Guide
- Poster

6. Resource People - Physical Education Teacher or Coach

PRETEACHING ASSESSMENT

1. Knowledge Questions

   a. When you play a game, do you know how to play it safely?

   b. Can you name all the playground equipment in our schoolyard?

   c. What are some things on our playground that could be dangerous?

   d. What would you do if someone was seriously hurt on our playground?

   e. What is a school playground for?

   f. Do you know the proper way of playing on the playground equipment?

   g. Has anyone ever shown you how to play the proper way on the equipment?

   h. Has anyone ever taught you the rules for organized games (soccer, baseball)?

2. Attitude Questions

Distribute the following questionnaire to students. When they have handed them in, graph the results on the board. (This will be a bar graph).

These questions will help determine their attitude towards playground safety.

	Never	Sometimes	Often
a. Do you push people on the playground?	____	________	____
b. Do you trip people on the playground?	____	________	____
c. Do you throw things at other people on the playground?	____	________	____
d. Do you pick up hazards on the playground?	____	________	____
e. Do you tell teachers about hazards you see on the playground?	____	________	____
f. Do you climb up the slide the wrong way?	____	________	____
g. Do you get angry on the playground?	____	________	____
h. Do you enjoy doing things that are scary?	____	________	____
i. Do you run across someone else's game?	____	________	____
j. Do you ever fight on the playground?	____	________	____

Teachers Note:

Don't have names put on the test - discuss results and the following questions after graph is drawn up.

1. Why do teachers supervise on the school playground at recesses and noon?

2. How would you feel if you got hurt on the playground? Why?

3. Do you think about getting hurt when you're having fun on the playground?

4. What would you do if you saw some of your classmates or friends playing in a dangerous situation? Why?

5. Do you play safely even if you don't see the supervisor outside?

6. If you saw someone playing incorrectly on a piece of equipment would you go tell them the proper way? Why? Why not?

C. Skill Questions

   a. If a new student came to your room, you might be asked to demonstrate the proper way of using the equipment to him. Could you do it?

   b. Demonstrate the proper use of each piece of equipment on our playground.

Broad Overall Objective: The students will become familiar with how to play safely on playground equipment and in the playing field and what to do in case of accidents.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
A. Playground Equipment			
1. The student will recognize playground equipment.	1. Equipment and the proper way of playing on them: a) swings; b) see-saw; c) slides; d) climbers; e) merry-go-round; f) sandbox.	1. Take children out to playground and ask various students to demonstrate the proper way to use the equipment. (Health)	
2. The student will be able to demonstrate the proper use of playground equipment.		2. Go back to classroom and make a set of rules for the playground. (Language Arts)	
		3. Bulletin board - draw pictures of proper and improper ways of using the equipment. (Art)	
		4. View film - Playground Safety - As Simple As A,B,C (Health)	1. Film - Playground Safety - As Simple As A,B,C, Central Alberta Motor Services.
		5. Discussion using Mad Mouse worksheet #28 as to proper use of equipment (Language Arts)	2. Worksheet #28 and #29 from Elmer The Safety Elephant Visits The Playground. Alberta Safety Council.
		6. Song - "Ouches" worksheet #29 (Music)	
		7. Hidden Words - playground equipment (Health)	3. Playing It Safe Activity Sheets, page 17 Canadian Red Cross Society.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
B. Risk Taking			
1. The student will be able to describe what risk taking is.	1. Risk-taking: a) what is it; b) is it worthwhile; c) coping with peer pressure.	1. Discuss with class what risks are, experiences students have had with dares, consequence, how to take responsible risks, calculated risks.	
2. The student will be able to describe how they decide if a risk is worthwhile taking.		2. Role Play - Scenario on risk taking. Give students practical communication skills in saying no to dares or risks.	
C. Organized games			
1. The student will be able to identify rules for playing organized games.	1. Choose from (depending on grade level and school): a) baseball; b) soccer; c) football; d) red rover; e) tag games etc.	1. Have Physical Education teacher come into classroom to discuss and show procedures of playing game or some other resource person. (Physical Education)	Resource person - Physical Education Teacher or Coach
		2. Go out and play games as a group and follow the prescribed rules. (Physical Education)	
2. The student will be able to identify injuries that can be caused by playing the game unsafely.	2. Cause of injuries: - improper equipment; - breaking rules; - unsafe procedures.	3. Discussion of what would happen if someone were to run through an organized game (e.g. Running through ball diamond may get you knocked out with a baseball) (Language Arts).	
		4. Discussion of possible injuries that can be sustained playing organized games.	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
D. Playground Hazards			
1. The student shall show awareness of potential hazards in the school playground. (k)	1. Awareness of playground hazards: a) broken glass; b) incinerator; c) dogs; d) equipment hazards (sharp ends, broken equipment); e) snowballs; f) ice; g) clothing; h) things carried in pockets.	1. Have students make lists of hazards on their playground (Language Arts).	
		2. Have students draw a map of the playground and mark potentially hazardous areas on it (Social Studies).	
		3. Make posters depicting the hazards on playground (Art).	
		4. Story "Hank the hazard Seller", Worksheet #18 (Language Arts).	Elmer the Safety Elephant Visits the Playground, Worksheet #18, #21, #22, Alberta Safety Council.
		5. Worksheet. #21 hazards in the pocket (Health).	
		6. Playground Hazard Checklist, Worksheet #22 (Health).	
		7. View film - Safety on the Playground (Health).	Film - Safety on the Playground, Central Alberta Motor Services.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
2. The student will be able to describe the proper procedure to retrieve an object which has landed outside the playground area.	2. Look for danger a) cars b) bicycles	8. Discuss what to do if an object rolls out of the playground area onto the street. Read a story or have class make up a story. eg. "Frederick the Flying Frisbee" (1982 Otto The Auto Stories).	Otto - The Auto, Alberta Motor Association.
E. Student Behavior			
1. Students shall describe how students behavior on playground can cause accidents.	1. What is good behavior? Bad behavior?	1. Class discussion on how student behavior can cause accidents (Language Arts).	
	2. Responsibility for their own behavior.	2. Story writing - write about how you feel when you get hurt on the playground because of someone's behavior (Language Arts).	
	3. Students feelings on the playground: a) anger; b) frustration; c) fun.	3. Have students analyze other students behavior on the playground - compile results and publish for the rest of the school (Health)	
		4. Situations in the playground - what would you do? Worksheet #26 (Health).	Elmer the Safety Elephant Visits the Playground. Worksheet #26.
		5. This is Me on the Playground Worksheet #25 (Health).	Elmer the Safety Elephant Visits The Playground. Worksheet #25.
		6. Story "Breaking A Spell" and discussion questions worksheet. #24 (Language Arts).	Elmer the Safety Elephant Visits the Playground. Worksheet #24.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
F. Accidents			
1. The student shall identify: a) The kinds of injuries that can be sustained on the playground; b) How to take preventative measures to avoid these accidents; c) How to report on these accidents.	1. Injuries that can happen: a) broken arms and legs; b) falls; c) scrapes.	1. Discussions on how accidents happen and how they can be avoided. (Language Arts)	
	2. Care to be taken on the playground.	2. Role playing - someone gets hurt on the playground - what steps would you take to help the injured? What steps should you take if you yourself are hurt? (Drama)	
	3. Steps in reporting accidents.	3. Have students make a list of how and where to contact the supervisor, principal. (Health)	
		4. Fill out information on address and phone number so that parents may be contacted. Worksheet #5 (Health). (It may be helpful for student to know their friends parents' names)	Elmer the Elephant Visits the Playground. Worksheet #5, #16, #17, Alberta Safety Council.
		5. Using worksheet. #16 students write a story on how Elmer got his injuries from being on the playground, his feelings, and will this teach him a lesson? (Language Arts).	
		6. Worksheet. #19 - Real or make-believe? (Health)	
G. Culminating Activity		1. View filmstrip from Michelin Kit "Play It Safe".	Safety Kit - Filmstrip Play It Safe, Michelin.

ELECTRICAL SAFETY UNIT

FOR GRADE FOUR TO GRADE NINE

RESOURCES FOR ELECTRICAL SAFETY UNIT

Order these resources well in advance.

1. CO-ED/November, 1981.

   Home Safe? Not this home. A picture of a house with 31 hazards. Page 62 and 63.

2. Northwestern Utilities Limited,
   Public Relations Department,
   10040 - 104th Street,
   Edmonton, Alberta.
   T5J 2V6

   Home Safe Home - Booklet (Class Set)

3. 1979 Farm Safety Coloring Book,
   Alberta Workers' Health, Safety and Compensation,
   Farm Safety Program,
   10709 Jasper Avenue,
   6th Floor,
   Edmonton, Alberta
   T5J 3N3

   Farm Safety - Coloring Book (Class Set)

4. Electrical Protection Branch,
   General Safety Services Division,
   Alberta Labor,
   I.B.M. Building,
   10808 - 99th Avenue,
   Edmonton, Alberta
   T5K 0G5

   Living Safely With Electricity - Comic Book (Class Set)

   Electrical Accidents Statistics

5. Department of Agriculture
Film Library
9818 - 107 Street
Edmonton, Alberta
T5K 2C8
Phone: 427-2127

Film - Electrical Safety Around The Farm #370

Electricity Handle With Care #373

6. Consumer Information,
Alberta Power Limited,
10040 - 104 Street,
Edmonton, Alberta.
T5J 2V6

Attention: Joan Sydness

Publications Just For You - Pamphlet

Electric Safety From A to Zap! - Comic Book (Class Set) and Film

Living With Electricity - Comic Book (Class Set)

Where The Little Light Bulb Gets It's Juice Comic Book (Class Set)

Use Energy Wisely - Binder

Electrical Safety Booklet (Class Set)

7. Science Equipment

500 ml beaker
6 Volt transformer
Copper wire
1.5 Volt light bulb
Vinegar/citric acid
Water

Frayed cords
Two cube taps
Eight extension cords
Iron/hot plate

PRETEACHING ASSESSMENT

I. Knowledge and Attitude Questions	Always	Sometimes	Never
a. Is electricity helpful?	____	____	____
b. Can electricity be harmful?	____	____	____
c. Will water conduct electricity?	____	____	____
d. Can electrical appliances be operated safely?	____	____	____
e. Can a toaster which is plugged into a wall be cleaned with a metal object?	____	____	____
f. Electrical cords with frays are dangerous?	____	____	____
g. Do you know what to do with a cord with a fray?	____	____	____
h. There is a proper way to remove a plug from a wall outlet?	____	____	____
i. Can electricity create enough heat to cause a fire?	____	____	____
j. Electricity found outdoors is safe in all conditions?	____	____	____
k. If you are dared to climb a power pole, is this a good idea?	____	____	____

Broad Overall Objective: The student will demonstrate a willingness to follow safe electrical practices indoors and outdoors.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
A. Introduction	Teacher Note: This is an optional activity to set the tone of the unit.		
1. The student will be able to discuss risk taking.	1. What is a risk? 2. What risks do we take? 3. Why do we take risks? 4. What is a calculated risk? 5. What factors effect a risk choice? a) time; b) peer pressure; c) knowledge or ignorance of consequences; d) perceived rewards.	1. Hold a general discussion with the students on risk-taking.	
2. The students will be motivated to learn about electrical safety.	6. Optional introduction to unit on electrical safety.	2. Have an electrician from the local power company come in and give the students a general talk on "electricity".	Local electrician.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
B. Electricity is helpful, but also very dangerous.			
1. Student will identify instances where electricity is helpful.	1. Electricity is helpful: a) gives light and heat; b) gives directions; c) does work.	1. View the film Where The Little Light Bulb Gets Its Juice. 2. Students write a chart giving examples of how electricity is useful. *3. Reinforce with comic Where the Little Light Bulb Gets Its Juice.	Where The Little Light Bulb Gets Its Juice, Film and Comic Book, Alberta Power.
2. Student will identify instances where electricity is harmful.	2. Electricity is dangerous: a) wall outlets; b) frayed cords; c) power lines; d) water and electricity.	4. View the film Electrical Safety From A To Zap. 5. Students write a chart giving examples of how electricity is dangerous. *6. Reinforce with comic Electrical Safety From A To Zap. * (optional step in sequence may be omitted at discretion of individual teacher).	Electrical Safety From A to Zap, Film and Comic Book, Alberta Power. (Teacher must order well in advance).

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Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
C. Conditions necessary for the operation of electrical appliances.			
1. Student will be able to describe water as a conductor of electricity.	1. Electrical currents can pass through water.	1. a) Demonstration: Passing a current through water - 500 ml beaker - 6 volt battery - copper wire - 1.5 volt bulb - vinegar/citric acid Student will see electricity can pass through water. b) student will diagram above demonstration and describe what they saw.	Electrical Safety, Booklet, Alberta Power.
2. Students will be able to describe the safe operation of electrical appliances.	2. Use of electrical appliances: a) around water, b) metal conductors - fork in toaster.	2. Students will discuss what are unsafe and safe procedures concerning electrical appliances.	Home Safe Home Booklet, Canadian Gas Association (1977) (P-12-13)
3. Student will be able to explain unsafe conditions for operation of electrical appliances.			

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
4. Student will be able to explain why a toaster which is plugged into a wall outlet should not be cleaned by placing a metal object into it.	3. Developing of safety rules concerning safe use of electrical appliances.	3. Student develops safety rule for cartoons of: a) Hair dryer cartoon, b) Toaster and fork Rules to be written under each cartoon.	Use Energy Wisely, Binder, Electrical Safety Section, Alberta Power Limited.
D. Unsafe and safe electrical practices concerning wall outlets and electrical cords.			
1. Student will be able to identify electrical cords that are frayed and have bare spots.	1. Electrical cords that are frayed and have bare spots	1. Students will examine various electrical cords to find if they are frayed or have bare spots.	Materials required - frayed cords, 2 cube taps, 8 extension cords.
2. Student will be able to describe proper methods of correcting frayed cord problems.	2. Correcting frayed electrical cords a) disposal or repair by an adult; b) repair cord by student (depending on age of student).	2. Students will discuss what should be done to cords that are frayed and have bare spots. Students could practice repairing a cord, depending on age.	Electrical Safety, Alberta Power.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
3. Student will be able to describe causes of frayed cords. 4. Student will be able to demonstrate how to remove an electrical cord from a wall outlet properly.	3. Causes of frayed cords: a) improper methods of removing plugs; b) cords run under carpets; c) near heat eg. iron, stove etc.	3. Student will discuss what are some common causes of frayed cords and practice proper handling of cords.	
5. Student will be able to describe unsafe electrical outlet.	4. Unsafe/Safe conditions a) frayed cords; b) proper versus improper method removing plug from outlet; c) avoid the electrical octopus.	4. Students will use the cartoons to identify and discuss safe and unsafe conditions.	Use Energy Wisely Safety Cartoons - electrical octopus, frayed cord, improper plug removal, Alberta Power.
6. Student will identify situations where electrically generated heat is a fire hazard.	5. Fire Hazards: a) wall outlet octopus; b) cords under rugs; c) frayed cords. Teacher Note: Heat is created by resistance in electrical circuits. Although this in controlled situations is helpful (ie. irons, stove). In situations such as the octopus, frayed cords, etc. this is a fire hazard.	5. Using an iron or a hot plate, teacher will demonstrate how electricity can be used to generate heat (scorch cloth - burn paper). 6. Student develops safety rule for cartoons: a) frayed cords; b) proper cord removal; c) the octopus; d) cord under the rug.	Iron/hot plate

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
E. Unsafe And Safe Electrical Practice Outdoors			
1. Students will describe how accidents happen around high tension lines.	1. Where and how accidents happen around high tension lines: a) climbing power poles; b) fly kites; c) fallen lines; d) contact moving equipment; e) transformers.	1. View films - Electric Safety and Electricity, Handle with Care.	Films - Electric Safety And Electricity, Handle With Care, Department of Agriculture.
2. Student will describe the consequences of unsafe behavior around high tension lines.	2. Consequences: a) burns; b) temporary blinding; c) death.	2. Teacher reads few examples of electrical accidents when people have contacted high tension lines.	Statistics Electrical Accidents in Alberta, Electrical Protection Branch, Alberta Labor

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
3. The student will describe the cause of accidents.	3. Causes of accidents: a) poor judgement; b) dare; c) ignorance.	3. Students discuss consequences of poor electrical safety practices outdoors. Discussion should focus on why accidents could happen. a) Climbing power poles - poor judgement - the dare b) Climbing into transformer yard - poor judgement - the dare c) Flying kites - poor judgement d) Contact by moving equipment - poor judgement	
4. Students will describe safe behavior around high tension lines.	4. High Tension Lines Situations: a) climbing power poles; b) flying kites; c) fallen lines; d) moving equipment; e) transformers.	4. Students will generate safety rules and design a poster illustrating any of the discussed rules.	
F. Culminating Activity		1. Safety Puzzle: a) student will identify ten safety hazards.	Picture of House with Hazards. (Co Ed Magazine Nov. 1981)

SAFETY IN WINTER CONDITIONS

FOR GRADE FOUR TO GRADE TWELVE

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Teacher Note

This unit can be integrated into the curriculum. For example, in the Grade Five, in the following subject areas throughout the school year:

1. HEALTH

   Use as a safety or personal responsibility unit.

2. OUTDOOR EDUCATION

   Use as a survival unit during winter season.

3. PHYSICAL EDUCATION

   Use in conjunction with outdoor physical education activities.

4. SCIENCE

   Heat Energy - insulation experiment with clothing; air force, weather - wind chill.

5. SOCIAL STUDIES

   Unit B - Canada: Exploration and settlement Kanata Kit 5, Native and European Contact, Immigration and Settlement.

6. LANGUAGE ARTS

   Starting Points in Reading, Ginn series, Grade V level "Below 32°", "Heroes" chapters.

PREPARATION:

1. Photocopy class set of the following
   - a) "When Temperatures Drop" page 4, 21, 22;
   - b) "Alberta Conservation and Hunter Education" Hypothermia Section p.1;
   - c) "Four Lines of Defense Against Hypothermia".

2. Order ACCESS video "Know Your World Wind Gauge".

3. Book Red Cross film "By Nature's Rules" or "Cold Can Kill".

4. Make transparencies of the following: "When Temperatures Drop" page 4, 7 (enlarge).

5. Supplies for science experiments:

    a) Wool socks,
    Cotton socks,
    Baby food jars with lids,
    Thermometers;

    b) Wind gage experiment, see video tape.

6. Students provide samples of outdoor clothing for insulation experiment and compiled wardrobe. Teacher supplies additional clothing - toque with face mask, etc.

7. Get principals permission to have a fire drill to produce experience with inadequate dress for winter season.

8. Accumulate a collection of newspaper articles.

9. Phone hospital to prepare them for student call. Hospital may not be able to assist but it is worth trying.

RESOURCES FOR SAFETY IN WINTER CONDITIONS

1. Red Cross Society,
   Alberta Division
   737 - 13 Avenue S.W.
   Calgary, Alberta
   T2R 1J1

   or

   9931 - 106 Street
   Edmonton, Alberta
   T5K 1E2
   423-3680

   When Temperatures Drop - Pamphlet
   Playing It Safe - A Safety Awareness Program
   Hypothermia - How to Help - Poster
   Frostbite - How to Help - Poster
   Basic First Aid - Teacher's Guide

   Cold Can Kill - Film)
   By Nature's Rules - Film) book one month in advance.

2. Alberta Recreation and Parks, Recreation Development Division
   Recreation Programs Branch, Outdoor Recreation Section
   9th Floor, Standard Life Building
   104 Street - Jasper Avenue
   Edmonton, Alberta

   Enjoy Winter Safely - Learn To Keep Warm - Booklet
   Enjoy Winter Safely - Be Prepared for Emergencies - Booklet

3. Alberta Energy and Natural Resources
   Fish and Wildlife Division
   13th Floor, Centenial Building
   10015 - 103 Avenue
   Edmonton, Alberta
   T5J 2T3
   Phone: 427-3574

   Alberta Conservation and Hunter Education
   Hunter Training - Teacher, Student Manual

4. Province of British Columbia
Ministry of Lands, Parks and Housing.
Parks and Outdoor Recreation Division
1019 Wharf Street
Victoria, B.C.
V8W 2Y9

Hypothermia and Hypothermia - Hidden Killers Outdoors - Pamphlet

5. Jim Lawless
Motion Picture Consultants, Inc.
1545 N.E. - 130th Street
Seattle, Washington 98125

Four Lines of Defense Against Hypothermia - Pamphlet

6. Kanata Kit 5 "Canada - A Meeting of Cultures"

7. Supervisor
Media Resource Center
Access
Calgary Health Sciences Center
3350 Hospital Drive N.W.
Calgary, Alberta
T2N 4N1
Phone: 283-8241

Know Your World: Wind Gauge #217501, 14.30 min. video.

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PRETEACHING ASSESSMENT

1. Knowledge and Attitude Questions

   a. List the winter clothing:
      i) you wear to school.
      ii) your parents wear when they work outside.
      iii) your parents wear when they are going to town or walking to the store.

   b. Jerome has been shovelling snow for a long time. When he comes indoors, you see that his fingers are white. He says they don't hurt. What is wrong?

      i) He has frostbite on his fingers.
      ii) He has snow on them.
      iii) He hurt his fingers shovelling the snow.

   c. Rhonda and Denise are walking in the snow. Rhonda gets frostbite on her fingers. What should Denise do first?

      i) Tell Rhonda to hit her hands together.
      ii) Rub Rhonda's fingers with snow.
      iii) Hold Rhonda's fingers between her own warm hands.

   d. A small boy played in the snow too long. He got tired so he sat on the steps outside to watch the other children. He got too cold. To warm him quickly you should:

      i) Put him in a tub of very hot water.
      ii) Make him exercise quickly.
      iii) Put him in a tub of warm water.

   e. How do you feel when your bus breaks down on a cold day?

   f. Have you thought much about this happening?

   g. In pairs, compare the winter clothing you wore to school today. Who is better dressed for cold weather?

h. Is the winter clothing you have chosen by you?

i. What clothing should you wear to school on a cold winter day?

j. Would you really wear this clothing or are you just saying that?

Broad Overall Objective: Develop a safe attitude and learn preventative measures and treatment of consequences that could arise due to winter weather.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
A. Introduction			
1. Student will be able to appreciate the value of dressing appropriately for winter conditions.	1. Create an interest in the students to learn about safety in winter conditions.	1. Hold a surprise school fire drill on a cold day.	
	2. Motivate to dress appropriately for the cold.	2. Have student make a snow sculpture. Compare difference in feelings between using bare hands with using mittens or gloves.	
B. Symptoms Of Cold			
1. Student will be able to distinguish and demonstrate physical symptoms of cold.	1. Symptoms of Cold: a) skin color (red to blue); b) teeth chatter; c) shivering; d) numbness.	3. What kind of clothing do you wear to school? (Act as part of the pretest - make a personal list recorded for future comparison)	
		1. In small groups, demonstrate symptoms of cold through role play eg. opening a door with a key using numb fingers.	
		2. How do you tell when you're cold? What does it feel like?	

		3. Transparency - student viewing or hand out for students.	Alberta Conservation and Hunter Education, Hypothermia Section, Alberta Energy and Natural Resources.
2. Student will be able to describe what cold is.	2. Cases of freezing due to exposure	5. Newspaper article collection for bulletin board (ongoing throughout the whole unit)	Newspapers, Library Newspapers
		6. Phone hospital - for any records of exposure cases (2 students in charge of this assignment to bring back information for the rest of the class).	Local Hospital
D. Student will be able to distinguish weather conditions resulting in harmful physical effects.	5. Physical effects data (tables) on exposed skin freezing time (wind chill-cooling rate)	1. Graph assignment from data presented: Wind chill cooling rates	When Temperatures Drop page 25, 26, Red Cross Society
		2. Science "Weather Patterns (chapter) wind velocity - Students construct their own wind gauge.	Wind Gauge ACCESS Video
	6. Bad weather predictions eg. expect low temperature when: a) the wind blows from the west, northwest, or north; b) the skies begin to clear in the afternoon or evening;	3. Students learn how to read a thermometer (Check temperature inside - compare to outside temp.)	When Temperatures Drop page 27, Red Cross Society.
		4. Test weather prediction hypothesis	
		5. Barometric pressure experiment	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
	c) Red sky at night sailor's delight (Calm) Red sky at morning sailors take warning (Wind).		
D. Responsibility For Others			
1. Student will be able to show concern for the welfare of victims of cold exposure	1. Taking responsibility for others welfare.	1. Language Arts - Chapters "Artic - Below 32 Degrees" "Heroes" - write a news bulletin on the scene of a blizzard.	Grade 5 - Starting Points text - chapter "Artic Below 32 Degrees", "Heroes".
E. Frost Bite			
1. Student will be able to distinguish frostbite symptoms	1. Frostbite symptoms: a) skin turns white; b) numbness; c) etc.	1. Discussion on frostbite symptoms and effects. Describe from experiences of students themselves, peer group, or family.	When Temperatures Drop page 12-14, Red Cross Society.
		2. Make one list of symptoms.	
2. Student will be able to demonstrate appropriate treatment	2. Treatment procedures: a) shelter; b) warm area slowly - by use of body heat.	3. Teacher provides treatment knowledge.	When Temperatures Drop page 12, 13, 14, Red Cross Society.
	Teacher Note: * do not rub or apply snow or direct heat	4. Role play demonstrating techniques prescribed.	Basic First Aid Manual, Red Cross Society.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
F. Hypothermia			
1. Student will be able to define hypothermia.	1. Definition - Loss of body heat faster than the body can produce heat.	1. Student notes. 2. Body heat loss diagram - label temperature zones on transparency (teacher resource).	When Temperatures Drop Page 7 - use as student handout, transparency as teaching aid Red Cross Society.
2. Student will be able to distinguish symptoms of hypothermia.	2. List symptoms: a) shivering; b) skin bluish color; c) unable to think clearly; d) slurred speech; e) abnormal behavior; f) drowsiness; g) death - (ultimate).	3. View film - Cold Can Kill.	Film - Cold Can Kill, Red Cross Society.
3. Student will be able to demonstrate appropriate treatment.	3. Treatment procedures: a) prevent further heat loss; b) remove wet clothing; c) give hot drinks (if conscious only); d) use heating aids - sleeping bag - hot rocks - another person	4. Play film through twice with students taking notes during second showing. 5. Class Discussion. 6. Student hand-out pamphlet.	Film - By Nature's Rules Red Cross Society (Book this film far in advance). Poster - "Hypothermia" How to Help" Red Cross Society, Playing it Safe. "Four Lines of Defense Against Hypothermia" Jim Lawless Motion Picture Consultants

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
F. Dressing For Winter			
1. Student will be able to accept responsibility for dressing according to weather conditions	1. How should you dress? a) general winter wear (how should you dress to come to school); b) boots - warm in case of bus breaking down; c) head wear - toque or hat (covering ears); d) mitten or gloves; e) winter parka.	1. As a starting point for the clothing section have a newsletter sent out to all bus drivers and parents emphasizing students coming to school with proper clothing. (County or School level authorization). 2. Student hand-out.	When Temperatures Drop page 21, 22, Red Cross Society.
	2. Social factors affecting choice of clothes: a) peer pressure; b) parents; c) cost.	3. Role playing - character: a) dressed according to winter conditions (toque with face mask); b) dressed in less than adequate winter clothing. Each character tries to sway the other to their form of dress. Role playing - child versus parent in attitudes towards what the child should wear to school. Class discussion - how did each character feel?	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		4. Do your friends winter clothing affect your choice in clothing? Why? or Why not?	
	3) How to stay warm and be "Cool" a) carry toque and mitten in pocket for emergency; b) have students think of ideas.	5. Discuss how to compromise for warmth while retaining peer acceptance. Brainstorm a class list.	
2. Student will be able to demonstrate proper dress for cold weather conditions.	4. Proper dress for cold weather: a) Layers; b) wool.	6. Student activity - In pairs compare wool and cotton material, to determine temperature loss. Method: a) Put socks of each material (wool, cotton) over small jars of room temperature water; b) Place one jar in a winter boot and the other jar in the match to that boot; c) Place the pair of boots outside; d) After 14 - 20 minutes check the temperature - record heat loss.	Enjoy Winter Safely, Learn To Keep Warm page 6-10, Recreation and Parks.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
3. Students should be able to choose clothing to prevent heat loss.	5. Areas of body most susceptible to cold eg. head 50% loss of body heat	7. Body heat loss diagram handout of body outline. Transparency - teacher resource. Label areas together in class.	When Temperatures Drop, page 4, Red Cross Society (transparency) Enjoy Winter Safely, Learn to Keep Warm page 9, Recreation and Parks.
		8. Science Unit "Heat Energy" (evaporation, conduction, radiation, convection, insulation)	Science 5 - text.
4. Student will be able to demonstrate a proper choice of clothing.	6. Students winter clothing a) upper body (coats) - down - polyester - wool - duck	9. Bring in students clothing (complete set - upper and lower body wear, boots). Have students choose from all available clothing the outfit that is the best for winter wear.	Enjoy Winter Safely Learn To Keep Warm, Recreation and Parks.
G. Option			
1. Students should realize that people have had to alter their clothing to suit weather conditions.	1. Integration into Social Studies Unit - with safety aspects brought forward.	1. Show filmstrip - students look for types of clothing shown in the filmstrip worn by early or later explorers.	Social Studies (five), filmstrip #1 Kanata Kit, Heritage Magazine, (picture reference).
H. Review			
1. Students demonstrate knowledge they have gained throughout unit.	1. Assess Lists of Winter Clothing	1. Students analyze their list of winter clothing as prepared at the beginning of the unit. 2. Students prepare a new list at the end of the unit (individual work)	

VALUE POSTTEST

1. When would you NOT dress in complete winter clothing? Put a check mark in the blank in front of the following reasons you might have.

_______ if you are late for the bus?

_______ if your Mom or Dad does not remind you?

_______ if the other students are not dressed in winter clothing?

_______ if you have grown too big for your winter clothing, or only have lighter clothing?

_______ if you have a short bus ride?

_______ if your bus is always warm?

_______ if you don't like your own clothing?

2. Out of 45 people on a bus, 30 were well dressed. Do you think the 15 who are not well dressed do not know what to wear? What do you think?

3. When would you NOT dress in complete winter clothing if you were going somewhere with your parents?

_______ if your parents are ready to go and you are not ready yet?

_______ if your Mom or Dad does not remind you?

_______ if your parents, brothers, or sisters are not dressed in winter clothing?

_______ if you have grown too big for your winter clothing, or only have lighter clothing?

_______ if you have only a short car ride?

_______ if you don't like your own clothing?

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4. Are there any differences in your answers for number 1 and number 3? Why are there differences?

SMALL BOAT SAFETY UNIT

FOR GRADE SIX TO GRADE NINE

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RESOURCES FOR SMALL BOAT SAFETY UNIT

1. Red Cross Society
9931 - 106 Street
Edmonton, Alberta
T5K 1E2
423-2680

Film - Cold Water Survival
Safety Is No Accident - Resource Guide
Basic First Aid - Teacher Guide - Posters - Manual

2. St John Ambulance
10055 - 110 Street
Edmonton, Alberta
T5K 1J5
423-5838

Bulletin Board First Aid Kit
We Can Help - Instructor's Resource Book

3. Alberta Safety Council
#210, 10526 Jasper Avenue
Edmonton, Alberta
T5J 1Z7
428-7555

Accident Fatalities - Booklet

4. Alberta Energy and Natural Resources
Hunter Training
Fish and Wildlife Division
13 Floor Centennial Building
10015 - 103 Street
Edmonton, Alberta
T5J 2Z3
427-3574

Alberta conservation and Hunter Education - Manual
Boating in Alberta - Summary of Boating Restriction Regulations

5. Boat Safety Check Committee
9931 - 106 Street
Edmonton, Alberta
T5K 1E2
423-2680

Boat Safety Check Kit - Pamplets and Posters
Other Boat Safety Resources

6. Visual Education Centre
75 Horner Avenue
Unit One
Toronto, Ontario
M8Z 4X5
(416) 252-5907

Safety Songs And Stories - Filmstrip and Cassett
- Small Boat Safety

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PRETEACHING ASSESSMENT

I. Knowledge Questions

a. What does "right-of-way" mean?

b. Number the following types of boats in the order that they have right-of-way over the others:

__________ power boat
__________ canoe
__________ rowboat
__________ sailboat

c. How many life jackets are required in a boat carrying five people? __________

d. Besides lifejackets, what other safety equipment must every small boat carry (Check)

__________ flares
__________ first aid kit
__________ 2 oars with rowlocks or 2 paddles
__________ anchor
__________ fishing gear
__________ bailing pail or manual pump
__________ signal horn

e. What lights does a small boat require when operating at night? Mark on the drawing where they should be and what color.

f. What kind of clothing is best when boating?
  i) warm, heavy clothing and rubber boots;
  ii) light, windproof clothing and low rubber soled shoes.

g. When caught in a storm away from shore, you should always head the boat:
  i) into the wind;
  ii) with the wind;
  iii) across the wind.

2. Attitude Questions	Strongly Agree	Agree Sometimes But Not Always	Strongly Disagree
a. Power boats pulling water skiers should not be allowed on lakes where there are canoes or divers.	________	______________	________
b. You don't really have to wear a lifejacket if you're a good swimmer.	________	______________	________
c. It's okay not to wear lifejackets, just as long as they're in the boat.	________	______________	________
d. It's fun to pass close to canoes with a powerboat to see if you can scare the canoers.	________	______________	________
e. It is okay to stand up in a boat as long as it's not moving.	________	______________	________
6. Canoes should never be used for fishing.	________	______________	________

Teacher Note:

This checklist is intended to be an initial survey of student attitudes, whereby each student may compare his own answers with those of peers. Follow-up discussion is advised to analyze reasons for misconceptions or negative attitudes, whether held by a few or by many. In this way, reinforcing factors can be assessed.

3. Skill Questions

a. Demonstrate the correct way of getting into a canoe.
   - i) When there are 2 or more of you and you launch from shore.
   - ii) When there are 2 or more of you and you launch from a dock.
   - iii) When you are alone and you launch from a shore.
   - iv) When you are alone and you launch from a dock.

b. Demonstrate the correct way of putting on various lifejackets or personal floatation devices.

c. Demonstrate how to give first aid in case of:
   - i) drowning;
   - ii) hypothermia;
   - iii) concussion;
   - iv) cuts and bruises;
   - v) sprained ankle;
   - vi) broken arm or leg.

d. Demonstrate safe procedure for launching and starting a boat with an outboard motor.

Broad Overall Objective is: The student will become familiar with the safety features of the machine, regulations regarding them, be able to demonstrate the safe way of handling them, how to prevent accidents and the first aid procedure in case of injury.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
A. Knowledge of Boats			
1. Student will be able to identify and point out features of: a) Canoes; b) dinghy; c) inflatable; d) row; e) raft; f) sail; g) outboard; h) inboard.	1. Design and special features of each, hazards and safety features of each.	1. Comparison of types. (Language Arts) 2. Identify suitable boat for students perceived needs and skill.	Catalogs - Ads Resource Personnel
B. Laws Regarding Use			
1. Student will be able to cite and give reasons for commonly used boating rules.	1. Right of way restrictions, regulations.	3. Why do we have rules? Discussion (Health/Guidance).	Booklets - Boating Safety Guide; Safety, Don't Leave Shore Without It, Boat Safety Check Committee.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
C. Accidents Involving Boats			
1. Students will be able to describe most common types of boating accidents, typical causes of such accidents, and how to prevent them.	1. Frequency and statistics: a) types of accidents; b) causes of accidents; c) prevention of accidents.	1. Charts from Data a) Drownings; b) Collisions: - with other boats - Involving skiers - Involving swimmers and divers c) Storms. (Math)	Accident Fatalities, Alberta Safety Council.
		2. Show Film - Cold Water Survival.	Film - Cold Water Survival Red Cross Society.
		3. Write essay or report on an accident known to have happened to self or acquaintance.	
D. Responsibility			
1. Student will develop discretion and independence in personal operation of small boats.	1. Decisions in Boating: - risk taking; - follow the leader; - dares; - not seeing consequences.	1. Role playing and discussion of situations wherein peers or associates attempt to persuade an individual to conform to their practices, whether positive or negative. (Drama, Language Arts, Social Studies).	Demonstrations by Resource Personnel Film strip - Small Boat Safety, Safety Songs And Stories.
		2. View filmstrip, Small Boat Safety.	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
E. First Aid			
1. Student will be able to explain and/or demonstrate proper procedures for treatment of boating - related mishaps.	1. Boating injuries: a) drowning; b) hypothermia; c) concussion; d) unconsciousness; e) cuts and bruises; f) sprains and strains; g) fractures.	1. Follow course as directed in guide (Health, Outdoor Education).	Red Cross Society First-Aid, St. John's Ambulance First-Aid.

SNOWMOBILE SAFETY UNIT

FOR GRADE SIX TO GRADE TWELVE

1. Red Cross Society
   9931 - 106 Street
   Edmonton, Alberta
   T5K 1E2
   423-2680

   Film - Snowmobile Safety
   Safety Is No Accident
   Basic First Aid - Teacher Guide - Posters - Manual

2. Alberta Recreation and Parks
   Recreation Program Division
   Outdoor Recreation Branch
   10405 Jasper Avenue
   9th Floor, Standard Life Building
   Edmonton, Alberta
   T5J 3N4
   427-6563

   Minimize Your Impact - Booklet

3. Alberta Motor Association
   Box 3500 Station "D"
   Kingsway Avenue and 109 Street
   Edmonton, Alberta
   T5L 4J5
   474-8620

   Film - Here's For Better Snowmobiling

PRETEACHING ASSESSMENT

1. Knowledge Questions

   a. Where may snowmobiles be legally operated?

   b. How old must you be to legally operate a snowmobile?

   c. What is a "kill switch"?

   d. Should the brake be locked when going down a steep hill?

   e. Check those items of safety equipment which every snowmobile should carry

      ________ road map
      ________ tool kit (spark plug wrench, pliers, adjustable wrench, etc.)
      ________ food rations
      ________ knife
      ________ extra spark plugs
      ________ extra fuel
      ________ extra drive belt
      ________ first aid kit
      ________ rope
      ________ waterproof matches
      ________ emergency flares
      ________ flashlight
      ________ extra ignition key
      ________ wire cutters
      ________ fuel line de-icer

2. Attitude Questions	Strongly Agree	Agree Sometimes But Not Always	Strongly Disagree
a. It is alright to snowmobile across your neighbors land if you know them well.	______	____________	______
b. It's almost impossible to upset a snowmobile.	______	____________	______
c. Snowmobiles do not harm shrubs or plants when you drive over them.	______	____________	______
d. If you don't know where the gate is it's okay to cut a wire fence.	______	____________	______
e. You should never snowmobile alone.	______	____________	______
f. You don't need insurance and registration on a snowmobile unless you operate it on public roadways.	______	____________	______
g. Hill-climbing (with snowmobiles) is a good safe fun sport.	______	____________	______
h. Helmets are for sissies only.	______	____________	______
i. Snowmobiles don't make enough noise to bother anybody.	______	____________	______
j. It's good sport to chase coyotes through deep snow with a snowmobile.	______	____________	______

TEACHER NOTE: This checklist is intended to be an initial survey of student attitudes, whereby each student may compare his own answers with those of peers. Follow-up discussion is advised to analyze reasons for misconceptions or negative attitudes, whether held by a few or by many. In this way, reinforcing factors can be assessed.

3. Skill Questions

1. Do you know how to:

a) mix fuel correctly for your snowmobile	YES	NO
b) start a snowmobile safely	YES	NO
c) Test and change a faulty spark plug	YES	NO
d) get a snowmobile unstuck from a deep snowdrift	YES	NO
e) cross a highway safely with a snowmobile	YES	NO
f) change a drive belt on a snowmobile	YES	NO
g) safely ride across a steep sidehill	YES	NO
h) climb a steep hill by zigzagging	YES	NO

Broad Overall Objective is: THE STUDENT WILL BECOME FAMILIAR WITH THE SAFETY FEATURES OF THE MACHINE, REGULATIONS REGARDING THEM, BE ABLE TO DEMONSTRATE THE SAFE WAY OF HANDLING THEM, HOW TO PREVENT ACCIDENTS AND THE FIRST AID PROCEDURE IN CASE OF INJURY.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
A. Knowledge of machines.			
1. Students will be able to identify and point out the various features of snowmobiles.	1. The machine a) Design and Safety Features, - starting - dead mans throttle - weight and maneuvrability - fuel b) How it works, - clutch - belts - repairing - spares and equipment c) Uses.	1. Comparison of different machines in terms of: a) Safety (checklist); b) Handling; c) Ease of repair; d) Economy. (Language Arts) 2. View film - Snowmobile Safety.	Manufacturers brochures Resource people - Dealers. Fish and Wildlife, Actual Machine. Film - Snowmobile Safety (George Gobe) Red Cross.
B. Laws regarding use.			
1. Students will be able to cite and give reasons for commonly used rules for snowmobiles.	1. What are the laws and why are their laws: a) restrictions; b) regulations; c) areas of use.	1. Discussion - What are the laws? - Why do we have rules governing snowmobiles? (Guidance) (Social Studies)	Booklet - Minimize Your Impact (Alberta Recreation and Parks) Local Ordinances from Town Office and County Office.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
C. Accidents Involving Snow Machines			
1. Students will be aware of the most common types of snowmobile accidents, their causes and how they might prevent them.	3. Frequency of snowmobile accidents: a) type; b) cause; c) prevention.	1. Charting analysis of accidents in terms of: a) collisions - object and vehicles; b) upsets; c) clothing; d) speed; e) terrain; f) Other. (Math)	Alberta Safety Council Accident Fatalities.
		2. Essay or report on an accident known to writer involving a snow machine.	
D. Responsbility			
1. Students will develop discretion and independence in personal operation of snowmobiles.	1. Dos and Don'ts of operating a snow machine. Risk taking: a) why; b) odds; c) consequences.	1. Lists compiled by students (Language Arts).	Film - Here's How For Better Snowmobiling, Alberta Motor Association.
		2. Discussion - Role playing of situations wherein peers or associates attempt to persuade an individual to conform to their practices, whether positive or negative. (Drama) (Social Studies)	

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
E. First Aid			
1. Students will be able to explain or demonstrate the proper procedures for treatment of snowmobile related mishaps.	1. Treatment of injuries: a) frostbite; b) fractures; c) hypothermia; d) concussion; e) cuts and bruises; f) eye injuries; g) snow blindness; h) shock; i) burns; j) unconsciousness.	1. Follow directions for course in guides.	Red Cross First-Aid Program, Ch. 5 You and Your Health Text Book, St. Johns Ambulance First Aid.

MOTORCYCLE SAFETY UNIT

FOR GRADE EIGHT TO GRADE NINE

1. Publications,
   Government Services,
   11510 Kingsway Avenue,
   Edmonton, Alberta.
   T5G 2Y5

   The Highway Traffic Act, 1975.

   Highway Traffic Act,
   Chapter H-7 Revised Statutes of Alberta 1980.

   Off-Highway Vehicle Act.

   The Off-Highway Vehicle Act,
   The Off-Highway Vehicle Regulations.

2. Alberta Transportation,
   Transportation Safety Branch,
   10220 - 103 Street,
   Boardwalk Building,
   Edmonton, Alberta.
   T5J 0Y8
   427-7910

   Cause of Motorcycle Collisions - Pamphlet

   Collisions Involving Motorcycles in 1980 - Fact Sheet

   The Moped and Power Bicycle - Fact Sheet

   Motorcycle Helmet ... Who Needs Them? - Pamphlet

   Who's To Blame? - Pamphlet

   Road Sign Quiz - Fact Sheet

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3. Alberta Safety Council,
#210, 10526 Jasper Avenue,
Edmonton, Alberta.
T5J 1Z7
428-7555

Accident Fatalities - Booklet

Motorcycle Rider's Handbook - Booklet

Films: Easy Rider
Survival

4. Alberta Solicitor General,
Distribution Center,
4503 - 68 Avenue,
Edmonton, Alberta. T6B 2N2
427-7011

or

Motor Vehicle Division,
At Local Treasury Branch.

The Driver's Handbook - Booklet

5. Alberta Recreation and Parks,
Outdoor Recreation,
9th Floor, 10405 Jasper Avenue,
Edmonton, Alberta
T5J 3N4
427-6563

Minimize Your Impact - Booklet
- During Recreational Vehicle Use

6. Local by laws when applicable,
Available from town and county offices.

7. Red Cross Society
9931 - 106 Street
Edmonton, Alberta
T5K 1E2
423-2680

Safety Is No Accident - Teacher Guide - Posters
Basic First Aid - Manual

8. St. John Ambulance
10055 - 110 Street
Edmonton, Alberta
T5K 1J5
423-5838

Bulletin Board First Aid Kit
We can Help - Instructor's Resource Book

9. Alberta Energy and Natural Resources
Hunter Training
Fish and Wildlife Division
13 Floor, Centennial Building
10015 - 103 Street
Edmonton, Alberta
T5J 2Z3
427-3574

Alberta Conservation and Hunter Education - Manual

PRETEACHING ASSESSMENT

1. Knowledge Questions

   a) Do you need a special license to operate a motorcycle? ____________________

   b) What class of license do you need? 1, 2, 3, 4, 5, 6, 7

   c) How old must you be to obtain a motorcycle license? (12, 14, 16, 18)

   d) Do front and rear brakes on a motorcycle operate independently or together? ___________________

   e) Should the brakes be applied

      i) rear brake first?
      ii) front brake first?
      iii) simultaneously?

   f) How do you apply

      i) the front brake?
      ii) the rear brake?

   g) Under normal circumstances (single rider, good visibility and road condition, no hazards, etc), on what part of the road should a motorcyclist ride?

      i) extreme right of his lane;
      ii) center of his lane;
      iii) extreme left of his lane;
      iv) anywhere he chooses in his lane.

   h) What is the usual speed limit for motorcycles in Alberta?

      i) on highways; ________ km/h
      ii) on secondary roads; ________ km/h
      iii) on ungraded roads; ________ km/h
      iv) within town or city limits; ________ km/h
      v) in school zones. ________ km/h

2. Attitudes Questions	Strongly Agree	Agree Sometimes But Not Always	Strongly Disagree
a. Helmets are a nuisance when operating a motorbike.	________	______________	________
b. Motorcycles are handy for weaving through heavy traffic.	________	______________	________
c. Motorcyclists are tough guys who wear leather jackets and carry chains.	________	______________	________
d. Motorcycles should be permitted higher speed limits because they are easier to maneuver and to stop than cars.	________	______________	________
e. Motorcycles are noisy and unpleasant.	________	______________	________
f. "Cat- walking" and "doing wheelies" shows how good a driver you are.	________	______________	________
g. Car drivers should be more considerate of motorbike operators.	________	______________	________
h. Motorcyclists should obey the same rules of the road as car drivers.	________	______________	________

3. Skill Questions

a. Demonstrate the correct hand signals used on a motorcycle to indicate:
   i) right turn;
   ii) left turn;
   iii) slowing or stopping.

2. Demonstrate the correct procedure for:
   - i) kick-starting a motorbike;
   - ii) starting out and stopping with a motorbike;
   - iii) adding fuel to a motorbike.

Teacher Note:

The useability of this unit should be based on the age, interest and abilities of each particular class. It may be used in its entirety or in part depending upon the class.

For Example this unit or part of it could follow a unit on bicycle safety in Grade Six.

The students should have covered this information by the time they are age 14.

Broad Overall Objective is: The student will become familiar with the safety features of the machine, regulations regarding them, be able to demonstrate the safe way of handling them, how to prevent accidents and the first aid procedure in case of injury.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
A. Knowledge of types of machines			
1. Students will be able to identify and point out the various features of motorcycles.	1. Machines: (a) Design-Safety features, - Starting - Operation of throttle - Weight - Maneuverability - Fuel (b) How it works; (c) Uses; (d) Equipment; (e) Maintainence - ie. refueling safely.	1. Comparison of different types of bikes in terms of safety handling, ease of repair, economy and refueling: a) Racing; b) Off road; c) Street; d) Trail; e) Mopeds. (Language Arts)	Manufacturers information in "motorcycle" magazines, actual machines. Motorcycle riders Handbook - Alberta Safety Council
B. Laws and Regulations regarding motorcycles			
1. Students will be able to cite and give reasons for rules governing the use of motorcycles.	1. Laws and Regulations.	1. List of rules and regulations (Guidance).	Road Sign Quiz, Alberta Transportation. The Drivers Handbook, Solicitor General. Highway Traffic Act Off-Highway Vehicle Act and Regulations.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
		2. Discussion on Why do we have Laws?	The Moped and Power Bicycle, Alberta Transportation
C. Evaluation of motorcycle accidents			
1. Students will be aware of the most common types of motorcycle accidents and how to prevent them.	1. Frequency of motorcycle accidents: a) Type; b) Cause; c) Prevention.	1. Charts made from analysis of motorcycle accidents in terms of: a) collisions; b) upsets; c) other vehicles; d) clothing; e) speed; f) terrain; g) inexperience. (Math) 2. Discuss importance of use of proper protective clothing in preventing injury. 3. Write an essay or report of an accident involving a motorcycle.	Accident Fatalities, Alberta Safety Council. Cause of Motorcycle Collisions, Collisions Involving Motorcycles in 1980, Who's To Blame, Alberta Transportation.

Instructional Objectives (Specific Objectives)	Content	Suggested Activities and Approaches	Resources
D. Responsbility			
1. Students will develop discretion and independence in personal operation of motorcycles.	1. Decisions in riding: a) risk taking; b) follow the leader; c) not thinking ahead; d) respect for property; e) collision avoidance.	1. Role playing how to and how not to operate a motorcycle. Situations where a student must decide to: a) Follow his peers; b) Develop an independent course of action; (Social Studies) c) choose collision avoidance. (Drama)	Motorcycle Helmets .... Who needs them, Alberta Transportation. Minimize your impact During Recreational Vehicle Use, Recreation and Parks. Film - A Drivers View of Motorcycles, Alberta Motor Association Film - Easy Rider And Survival, Alberta Safety Council
E. First Aid			
1. Students will be able to explain or demonstrate the proper procedure for treatment of motorcycle related injuries.	1. Treatment of injuries: a) fractures; b) cuts and bruises; c) concussion; d) shock; e) eye injuries; f) head injuries; g) burns - exhaust explosion.	1. Follow course as directed in a First Aid Guide.	Red Cross First-Aid Course; Alberta Conservation and Hunter Education, Energy and Natural Resources; St. John's Ambulance First Aid Course.

Safety Statistics 1980 (Motorcycles) Quiz or Chart

1. How many accidents were caused by;
   a) Failing to stop? __________
   b) Loss of control? __________
   c) Improper left turns? __________
   d) Going too fast? __________
   e) Animals? __________
   f) Human factors? __________
   g) Environmental factors? __________
   h) Weather? __________
   i) Mechanical failures? __________
   j) Unknown factors? __________
   k) Fatigue? __________
   l) Drugs or alcohol? __________
2. How many accidents occured in 1980? __________
3. How many people were killed on motorcycles? __________
4. How many people were injured? __________
5. How many accidents were the fault of the driver? __________
6. How many accidents resulted in no injuries? __________
7. What is the biggest cause of accidents? (environment, mechanical etc.) __________

Student Safety Education Project:
Research Report

by

Dr. Kerrie Pain

for

County of St. Paul, #19

Project Director: W. Webb

UNDER CONTRACT TO ALBERTA EDUCATION, EDMONTON, ALBERTA

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VOLUME II

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Abstract

The St. Paul Safety Education Project consisted of the design and field testing of a series of safety instruction units for use in the elementary schools. Seven safety units, one for each grade from K - 6, were designed by elementary school teachers using Green's (1980) model of health education. Units were designed to be integrated into a number of subject areas, and attempted to change both knowledge about and attitude toward safety. After units were field tested, students of four different types of teachers were tested and compared. The four groups were:

a) design (students of teachers who designed and tests the units);
b) pilot (students of teachers who also taught the unit);
c) internal control (in the same county as the design group, but not involved in teaching the safety unit);
d) external control (randomly chosen classes from an adjacent county).

Results indicated significant knowledge differences among student groups in all grades, with the design/pilot groups exceeding the controls. Only one significant difference was found in attitude scores. Results are discussed in terms of patterns of reported safety teaching and the problems of assessing safety attitudes. Also presented are results of teacher questionnaires and interviews concerning the development of the safety project and patterns of safety instruction. A post-hoc analysis of the safety attitude test indicated that it did differentiate between students designated as "safe" and "unsafe" by teachers.

Summary Report

This study was completed in St. Paul County schools in Winter and Spring, 1982, with the cooperation of the Planning and Research Branch of Alberta Education, and the Research and Education Branch of Workers Health, Safety and Compensation.

The St. Paul Safety Education project consisted of the design and field testing of a series of safety instruction units for use in the elementary schools. Units were designed by teachers to be integrated into the current curriculum, and stressed both knowledge and attitude.

The safety units developed for each grade are as follows:

Kindergarten: Poison Safety
Grade 1: Pedestrian Safety
Grade 2: Fire Safety
Grade 3: Playground Safety
Grade 4: Electrical Safety
Grade 5: Winter Clothing (Renamed: Safety in Winter Conditions)
Grade 6: Recreational Vehicles (Snowmobiles, Motorcycles, and Small Boats)

Field testing was done by teachers during Spring, 1982. Units involved an average of eight hours of instruction, with more than 50% carried out through discussions and student projects.

To assess student change due to the project, both knowledge and attitude tests were administered to students at the end of the field test. Students in four comparison groups were tested. Two groups received instruction in the unit: the design group (students of teachers who designed the units), and the pilot group (students of teachers not designing the unit, but teaching it). Two control groups were also tested, but did not receive instruction in the unit. One group was selected from the remaining St. Paul teachers, and the other was randomly selected from a neighbouring county (Control I and Control II, respectively).

Results of the knowledge tests show a consistent, significant difference among the groups, with the teaching groups (pilot and design) scoring higher than the control groups. This indicates that instruction in the safety units was effective in raising the level of student knowledge in the areas taught. It is noteworthy that there was no consistent difference between design and pilot classes, even though the design teachers were much more involved with the units.

Two safety attitude tests were also designed for use in this study, one for use in grade 1 and the other for use in grades 2 to 6. Results here were less consistent than the knowledge test results, with a significant difference found only in grade 5. Within the county, results from grades 3 to 6 fell in the expected design/pilot, control direction, but differences are small, with much variability within groups.

To help interpret these results, a post-hoc validation study of the attitude tests was conducted, comparing test results of students designated "safe" and "unsafe" by design and pilot teachers. Results of this analysis indicated that there was a consistent difference between""safe" and "unsafe" groups which was either statistically significant, or approached significance, indicating that the Grade 2 - 6 instrument has some validity. (There was no difference between groups on the grade 1 test.)

To summarize, the safety units were clearly effective in changing student knowledge of safety at all grade levels. In terms of attitude change, the picture is less clear. The most likely interpretation of the results is that the short length of the program resulted in a very small amount of attitude change, which the test was not powerful enough to detect.

Clearly, more research is needed to answer the attitude change question. More time may be meeded to effect this change, or it may be important to build more specific research based attitude change techniques into the units.

Recommendations

1. This instructional model appears to hold promise for increasing knowledge and perhaps changing attitudes. Further research is needed to increase our understanding of the processes involved.

2. It is recommended that units be further revised by specialists in attitude change to make the attitude component of the units more specific and incorporate additional techniques.

3. It is recommended that the revised units receive a further field test in a different school system to see if a longer time and/or more specific teaching can increase attitude changes.

4. The safety attitude test developed for use in this study (Grades 2 - 6) appears to be a viable instrument. Further analysis and revision of the test is recommended, particularly since there appears to be a strong need for a test of safety attitudes in related types of research.

1. Introduction

The St. Paul Safety Project evolved into its present form through a continuing process of discussion and cooperation among a number of different agencies. It received its first impetus through the Canadian Petroleum Association's expression of concern about the accident rate among young workers. In a letter to the Ministers responsible for Education and Workers Health, Safety, and Compensation, the Association suggested the introduction of safety education into the schools. Gradually, as additional agencies entered the discussion, the project took shape. The final evolution of the project took place when the County of St. Paul agreed to field test a safety awareness program, and teachers there formed a steering committee to decide on a feasible plan of action within the county context.

The final project consisted of the design and field testing of a series of safety instruction units for the elementary grades. Seven different safety units were developed by teachers for use in each grade from K to 6. Units were based on Green's (1980)[1] model of health education, and stressed attitude changes as well as knowledge instruction. Unit topics were selected with reference to statistical information, material availability and teacher interests. Specifically, the safety units developed for each grade were as follows:

Kindergarten: Poison Safety
Grade 1: Pedestrian Safety
Grade 2: Fire Safety
Grade 3: Playground Safety
Grade 4: Electrical Safety
Grade 5: Winter Clothing (Safety in Winter Conditions)
Grade 6: Recreational Vehicles (Snowmobiles, Motorcycles and Small Boats)

A more detailed description of the listing of projects and the format of the units, as well as copies of the development guidelines and the units themselves are included in the accompanying report by W. Gould.

The evaluation of the St. Paul Safety Project focusses on the unit design phase of the project, in particular the field test of the units conducted in St. Paul in Spring, 1982. Each unit was taught by the designing teachers and one other pilot teacher, and then students in these classes were compared to those in two different control groups, one inside and one outside of the county. Both student knowledge and student attitude were tested. As well, teacher interviews and questionnaires were used to provide a broad look at project implementation and general safety teaching.

Note that the time of field testing necessitated some changes in a few units. In particular, much of the Winter Clothing unit was revised to fit a spring and summer framework, and it was impossible to teach the Snowmobile section of the Recreational Vehicles unit. The Small Boats part of the grade 6 unit was also omitted from the evaluation because it could not be taught within the time frame available. Thus, only the Motorcycle section is actually evaluated here.

II. Review of the Literature

An extensive literature review was carried out before program instruction began. The complete literature review is included in Appendix A of the report. For brevity, only the conclusions will be given here.

In order to design and evaluate innovative safety programs, it was first necessary to examine previous research to determine what has or has not worked in the past. This literature review focusses on programs for school children which were designed to effect some sort of attitude or behaviour change. Because of the amount of literature involved, the content covered has been limited to research dealing with "self-directed" behaviour. This includes traffic safety programs, drug education, etc., but excludes "other-directed" attitudes such as those involved in studies of prejudice.

It was extremely difficult to find any consistent trends in this diversity of studies of educational programs. Interpretation of results was often hampered by serious deficiencies in research methodology and statistical analysis. In addition, the elements of the programs used were rarely described in sufficient detail to adequatly describe the context of the courses. Looking for evidence as to which type of programs were most effective was also made difficult by the fact that few authors have specifically examined the relative effectiveness of different programs; most simply compare one program to a no-treatment control. Virtually no research has looked at the effect of teacher characteristics nor has any checked for generalizability of program success across instructors.

With these cautions in mind, let us examine answers to the specific questions posed at the beginning of the literature search.

a) What are examples of educational programs aimed at school-aged children which have attempted to influence childrens' attitudes and/or behaviour?

The studies reviewed here have used a large variety of instructional strategies. They have been presented by school personnel, experts in different fields, ex-addicts, and specially trained peers. Media of instruction have included books, pamphlets, slides, films, video-tapes and demonstrations. Some programs have been taught through formal lectures, some in large or small discussion groups. Counselling techniques such as role playing have been used, as have lab demonstrations and games. While most studies have directly addressed the attitude or behaviour changes others have attempted to teach underlying skills, such as those in decision-making. A large number of programs, particularly in drug education, use some combination of techniques.

b) What are the characteristics of educational programs aimed at school-aged children which have succeeded in influencing children's attitudes and/or behaviours?

Again, this is a complex question to answer since most techniques have been shown to be effective in some situations, but ineffective in others. Traffic safety education programs seem to indicate that instruction is most effective in realistic situations, particularly for younger children who may find it difficult to generalize from more abstract training. In both traffic safety and drug education, programs based on social learning principles appear to be more successful than those without this theoretical base, although the number of these studies is small. Program duration may also have an effect in that very short, one or two day programs were never successful in producing attitude change. Thus, some extension across time may be a minimum prerequisite for attitude change.

Effects of manipulating the level of fear arousal in dental hygiene programs is mixed. These studies may indicate, however, that repeated measurement and feedback may be effective in increasing and continuing behaviour change.

c) What are the characteristics of educational programs aimed at school-aged children which have failed in influencing children's attitudes and/or behaviour?

To a certain extent, this question has been answered by part (b). Indeed, one could say that most types of programs have been shown to be ineffective in some study or other. A disturbing trend is that studies which are methodologically stronger seem to be less likely to report significant results than weaker studies.

A negative finding of some drug education studies is the not infrequent report of increasing drug use following educational programs. No one type of program consistently produces this effect, although it may be somewhat more likely following programs focussing primarily on facts, and those using peer leaders.

d) Is there research evidence indicating that educational programs which have succeeded in producing changes in children's attitudes and/or behaviour have had a long-term impact on attitudes and/or behaviour?

Few studies have addressed the issue changes. Most give post-tests immediately after the program or a few weeks later. Those which have looked at long-term changes tend to report greatly diminishing gains over time. The number of studies using long-delayed post-tests is so low, that attempting to relate amount of long-term impact to program type is likely to result in misleading impressions.

III. Evaluation Methodology

A. Instruments

The evaluation of the St. Paul Safety Project is based on information collected from students, teachers, and principals. The four main data sources included:

1) tests of student knowledge in each content area;
2) tests of students' safety-related attitudes;
3) teacher questionnaires;
4) teacher and principal interviews.

Brief descriptions of the evaluation instruments are given below.

1. Student Knowledge Tests. Tests were constructed by the Evaluator for each content area. They were based on unit outlines and suggested materials, as well as teachers' comments concerning content emphasis and anticipated changes due to seasonal or time changes. These were multiple choice tests and ranged from 11 to 25 questions in length. Tests were pre-tested in several classes in another school district and then revised for administration in St. Paul. Test length, reliability, and number of students are presented in Table 1. (Note that questions 1 - 15 of the Fire Safety test were taken from the Learn Not to Burn Curriculum,[2] Level 11, since these were relevant questions that had been pre-tested.) Copies of the Knowledge tests are included in Appendix B.

2. Student Attitude Tests. When a thorough literature search revealed no general safety attitude tests, new instruments were constructed for use in this study. These were based on research evidence in fields such as driver education and accident proneness, theoretical writing on safety topics, and interviews with professionals involved with Child Safety Programs. From these

Table 1

Number of Items and Students for Knowledge Tests.

Reliability if Based on Total Sample of Students.

Grade		K	1	2	3	4	5	6
No. of Items		11	20	24	17	23	25	17
TOPIC AREA		Poisons	Pedestrian	Fire	Playground	Electrical	Winter Clothing	Motor Cycles
Reliability (KR-20)[1]		.50	.72	.65	.49	.84	.77	.46
Total No. of Students	Design	47	33	31	41	20	40	47
	Pilot	9	14	16	31	47	15	17
	Control I	30	47	33	50	44	38	48
	Control II	40	35	38	43	41	57	49
Students In Extra Grades	Design	0	5 Gr. 2 4 Gr. 3	0	0	2 Gr. 5	12 Gr. 4	0
	Pilot	0	0	0	0	21 Gr. 5	0	0
	Control I	0	0	10 Gr. 3	0	7 Gr. 3	0	0
	Control II	0	5 Gr. 2 3 Gr. 3	0	No Info.	7 Gr. 5 5 Gr. 6	2 Gr. 4 6 Gr. 6	7 Gr. 5
Total N		126	129	118	165	152	150	161

1. See Popham, 1981, for a concise discussion of reliability of the KR-20 (pg. 145)

sources, four different components of safety-related attitudes gradually emerged. These included feelings of being responsible for one's own behaviour and safety, taking some responsibility for the safety of others, general attitudes toward safety and safety instruction, and propensity for risk taking.

From these topic areas, two different Likert-type attitude scales were developed, one for kindergarten and grade 1 students and one for students in grades 2 - 6. These instruments were pre-tested in non-study classrooms, and revised on the basis of general comments and correlations with the total scores. This pre-test indicated that the kindergarten students had a great deal of difficulty with the test. While they appeared able to understand the instructions, they were not introspective enough to imagine behaviour in the situations presented. Since the problem appeared to be a result of the level of cognitive functioning of these 5 and 6 year old children, rather than a problem specific to the text, it was decided to omit attitude testing for the kindergarten groups.

The resulting test for grade 1 students consisted of 15 items. Each item presented a brief story. Students were asked to compare themselves to the child in the story and then to answer on a 3-point scale from "Like Me" to "Not Like Me".

Students in grades 2 - 6 all received the same attitude test with grades 2 and 3 answering on the test booklet and grades 4 - 6 answering directly on optical score sheets. This test consisted of 35 items, 17 answered on a 5-point "Always Like Me" - "Never Like Me" scale, and 18 answered on a 5-point "Strongly Agree" - "Strongly Disagree" scale. To reduce tendencies to answer in a socially desirable manner, students were assured that responses would be confidential and that teachers would not see the results. (Table 2 presents a summary of number of students and reliability of the attitude tests.)

A major question concerns the reliability and validity of these attitude tests, since time did not permit further research into the adequacy of the revised scales. They certainly have face validity, and appear to be valid in terms of content covered, but evidence as to their correspondence to actual safety behaviours is unknown. To obtain an estimate of validity, after the study, design and pilot teachers were asked to designate 3 - 4 students from their classes as having "safe" or "unsafe" attitudes. Results of this analysis are presented in Part V.

Table 2

Summary of Number of Items, Choices and Students for the Attitude Tests. Reliability is Based on the Total Sample of Students.

Grade		1	2	3	4	5	6
No. of Items		15	35	35	35	35	35
No. of Choices (Max. Score)		3 (45)	5 (175)	5 (175)	5 (175)	5 (175)	5 (175)
Reliability (Coefficient alpha)[1]		.63	.67	.70	.69	.69	.68
Total No. of Students	Design	33	31	42	20	42	47
	Pilot	14	16	31	47	15	17
	Control I	46	33	50	50	38	48
	Control II	35	38	44	41	60	49
Total Students		128	118	167	158	155	161

1. See Popham, 1981, p. 45

3. Teacher Questionnaires. In Fall, 1981, a questionnaire had been sent to teachers concerning the nature and extent of safety instruction in their classes. A similar questionnaire was sent to teachers as part of the final Safety Project Evaluation, providing both pre-post and comparison group data.

4. Teacher and Principal Interviews. In order to augment the test and questionnaire results with more qualitative information, a series of interviews was conducted with a sample of St. Paul teachers and principals. These interviews centered on perceptions of the project and attitudes toward safety education.

B. Subjects

Student tests and teacher questionnaires were administered to four different comparison groups; designated Design, Pilot, Control I and Control II. These groups were formed as follows:

a) Design: Each safety unit was designed by two teachers who then taught the units to their classes. These teachers volunteered or were designated from the school staffs. (The Kindergarten level steering committee member also participated in the design and field testing of the unit, resulting in three design teachers at the Kindergarten level.)

b) Pilot: One teacher at each grade level was randomly chosen from St. Paul schools to field test the safety units. To keep the number of students in the designated grade as high as possible, split classes were eliminated from this sample. (In addition, one of the project steering committee members taught the grade 4 unit to his grade 5 class, since numbers were particularly low for this unit.)

c) Control I: The internal control group was composed of a group of teachers randomly chosen from the remaining St. Paul teachers. Students of these teachers received the post-tests but no organized instruction in the units.

d) Control II: The external control group was randomly selected from teachers in Smoky Lake, a county adjacent to St. Paul. The two counties are similar in primary occupation, of general socio-economic level, and size of schools. Their major differences lie in the proportion of native students and proximity to a major community. Two or three classes were chosen from these schools, with an attempt made to include a similar number of split classes as in the St. Paul group.

Teacher and Principal interviews were conducted with a slightly different sample. Five of the seven principals of St. Paul Schools were included, plus a random sample of 12 secondary teachers[1] and 6 Control I teachers. All design teachers were interviewed during revision meetings at the end of the project. All design and pilot teachers were also requested to keep a running log specifying time, manner and subject area of teaching the units. These logs were received from 21 of the 23 teachers (91%).

C. Test Administration

Tests for Kindergarten and grade 1 students were administered to small groups (four to eight students) by the Project Research Assistant. Grade 2 to 6 tests were administered to classroom groups by the teacher as ordinary classroom tests. In grades 4 to 6 tests were completed individually by students, with responses recorded directly onto optical score sheets.

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[1] Secondary teachers were interviewed to provide information as to safety teaching at this level, and also to assess their impressions of the elementary project.

VI. Results

Results of the study will be presented in five sections:

1) results of the knowledge tests;
2) results of the attitude tests;
3) a summary of responses to teacher questionnaires;
4) summary of teacher and principal interview responses;
5) teacher logs.

A. Results of the Knowledge Tests

Table 1 presents a summary of the seven exams given from Kindergarten to grade 6, including the number of items, topic area, test reliability (homogeneity) and numbers of students. A number of split classes were included in the sample so students in other grades were often included in the course and the test sessions. Since the unit content was not specifically grade-related, and because numbers generally balance out between teaching and control groups, all available students were included in the following analyses, regardless of grade.

The results of the comparisons of the four groups are given in Table 3. This table gives the group means and standard deviations, as well as results of overall statistical tests and pair-wise comparisons. In all grades, there is a significant difference among the different groups, with the design and/or pilot groups receiving higher scores than one or both of the control groups. The combined design/pilot groups scores are always higher than combined control group scores. Surprisingly, the external control group score is higher than the internal control in grades 3, 4, and 5. Although a difference between design and pilot groups was predicted, there were no significant differences between these groups except in Grade 5, where the difference is in the opposite direction to that expected.

Table 3
Comparison of Knowledge Test Means Among Four Groups. (Standard Deviation Given in Brackets)

(Only the statistically significant group comparisons are given in the right hand column.)

Grade	No. of Items	Group Means				F-Test[2]	Sig. Gp. Comparisons ($p < .05$)[1]
		Design	Pilot	Control I	Control II		
K	11	8.6 (1.6)	9.4 (1.3)	7.0 (1.9)	7.0 (1.6)	11.9***	D > C.I D > C.II P > C.I P > C.II
1	20	17.0 (2.0)	14.9 (2.9)	13.0 (3.6)	12.6 (2.6)	16.5***	D > C.I D > C.II
2	25	20.1 (2.0)	20.5 (2.9)	17.3 (3.1)	16.1 (2.9)	16.7***	D > C.I D > C.II P > C.I P > C.II
3	17	12.8 (2.5)	12.2 (1.8)	11.0 (2.4)	12.5 (2.1)	7.2***	D > C.I C.II > C.I
4	23	17.8 (3.7)	18.5 (2.5)	15.7 (3.2)	17.6 (2.8)	7.0***	P > C.I C.II > C.I
5	25	12.3 (4.5)	16.2 (4.8)	7.6 (3.4)	11.6 (3.8)	14.5***	P > D D > C.I P > C.II C.II > C.I
6	17	12.5 (2.4)	12.0 (2.4)	11.3 (2.3)	11.3 (2.2)	3.1*	

*p < .05 **p < .01 ***p < .001

[1] D = design P = pilot C.I = Control I C.II = Control II

[2] Results of analyses of variance tests, with Schiffe pairwise comparisons.

For each grade, results are as follows:

Kindergarten: Both of the groups who taught the poison unit scored higher than either control.

Grade 1: Only the design classes scored significantly higher than the controls, with the pilot class in an intermediate position.

Grade 2: Both teaching groups received higher mean scores than the control groups on the fire unit test.

Grade 3: There was a reversal on the playground unit, with the external control scoring almost as high as the design group and higher than the pilot group. Within the county, results follow the predicted pattern (Design - Pilot - Control).

Grade 4: Again, the external control scored higher than expected. Both the pilot classes and the external control classes (both with many grade 5 and 6 students) scored significantly higher than the internal control.

Grade 5: In the outdoor clothing unit, the pilot class scored significantly higher than the design class, and both pilot and design were higher than the internal control. Again, the external control exceeded the internal control.

Grade 6: Here, there is an overall difference among the four groups, but no two are significantly different in pair-wise comparisons: scores are generally fairly close together, although means are in the predicted direction.

B. Results of the Attitude Tests

Table 4 presents the average attitude scores for the four groups. Comparison of the scores on the attitude tests revealed little difference among the groups. Only in grade 5 did the differences reach significance; here, the design group and the external control group scored higher ("safer") than the pilot and internal control. In the other grades, differences were small, with high variability within the groups. There is a tendency for the external control to score higher in attitude than the St. Paul control, as in the knowledge test results.

These results could be interpreted in a number of ways. It may be that the program was effective, but the attitude tests were not sufficiently reliable or valid to detect resulting differences. Or, the program may have been too short to produce a measureable difference, since units were taught for a maximum of three weeks. A third explanation is that the units were simply not effective in changing attitudes.

To explore the validity of the test itself, a post-hoc exploratory study was done. Pilot and design teachers were asked to nominate three or four students from their classes that they would say had "safe attitudes" or "unsafe attitudes". Definitions of these attitudes were left to the teachers themselves. The test scores for these students were then located and compared. Results are given in Table 5.

There are no significant differences between "safe" and "unsafe" students on the short grade 1 test. Means of the groups are very close.

In the other grades, however, the differences are significant or approach significance, even with the small number of students included. In each case, the "safe" students scored higher than the "unsafe" students.

Table 4

Comparisons of Attitude Scale Means Among the Four Groups. (Standard Deviations Given in Brackets)

(Grade one test scores have a maximum of 45, and grades 2 - 6 have a maximum of 175.)

Grade	No. of Items	Group Means				F-Test	Sig. Gp. Comparisons
		Design	Pilot	Control I	Control II		
1	15	35.2 (4.4)	35.9 (4.0)	35.0 (4.1)	35.6 (3.6)	0.30	
2	35	118.1 (18.8)	124.9 (15.4)	126.4 (12.0)	127.2 (11.9)	2.66	
3	35	120.1 (15.0)	121.9 (17.7)	118.1 (15.1)	123.8 (18.3)	1.02	
4	35	124.2 (10.3)	123.9 (16.0)	122.0 (14.0)	121.1 (12.8)	0.41	
5	35	121.3 (12.2)	109.3 (18.2)	108.5 (13.7)	122.1 (11.9)	11.53***	D > P C.II > P D > C.I C.II > C.I
6	35	111.5 (12.5)	111.4 (13.2)	108.4 (14.9)	110.7 (12.1)	0.52	

[1] D = design P = pilot C.I = Control I C.II = Control II

*** $p < .001$

The combined grade 2 to 6 results in Table 5 are very significant. These results support the validity of the attitude test, since it does distinguish between these extreme groups. However, the test may still not be sensitive enough to detect smaller differences beteeen less extreme groups.

Table 5
Comparison of Students Designated as Having "Safe" and "Unsafe" Attitudes on the Safety Attitude Scale

Grade	1	2	3	4	5	6	Combined 2-6
"Safe" Gp. Mean (St. Dev.)	36.7 (4.2)	130.0 (6.8)	134.7 (8.0)	127.8 (10.9)	124.0 (9.9)	111.6 (10.5)	123.9 (12.5)
"Unsafe" Gp. Mean (St. Dev.)	35.5 (3.1)	115.4 (12.9)	111.3 (18.3)	117.8 (10.7)	108.3 (16.5)	103.4 (11.8)	111.5 (14.1)
t Value (2-tailed)	.84	2.03 (p. = .08)	2.87*	2.20*	2.27*	1.61 (p = .13)	4.11***
No. of Students (Safe-Unsafe)	23 (12-11)	9 (4-5)	12 (6-6)	23 (12-11)	15 (8-7)	19 (11-8)	78 (41-37)

$^*p < .05$ $^{**}p < .01$ $^{***}p < .001$

C. Teacher Questionnaire Results

Questionnaires were sent to teachers in Fall, 1981 and in Spring, 1982, asking teachers about their teaching in safety-related areas. Table 6 presents the percentage of teachers in each category marking each response to the questions. Four different groups are compared: The St. Paul County teachers responding in the Fall (including both elementary and secondary teachers), the Spring testing of the St. Paul control, the external control, and a group comprised of the design and pilot teachers. (Note that the St. Paul teachers responding in the Spring are a subset of those responding in the Fall.)

The majority of teachers in all groups included safety education in their classes. The areas covered most frequently by teachers in all groups included home, farm, fire, pedestrian, school and school bus safety. There appear to be few differences between the three groups tested in the Spring, except for the design and pilot teachers' emphasis on the "other" category which included their specific unit topics. There is a difference between the Spring and Fall testing overall, in the percentage of teachers teaching different areas over time. However, the average time figures at the bottom of question four are based on a very small group of teachers who stated actual minutes of instructional time rather than frequency per week, etc., therefore, they must be treated with much caution. Teachers indicated that most safety instruction was given in health (51%), with some teaching also done in science (23%), language arts (11%), social studies (9%), and physical education (3%).

Table 6

Summary of Teacher Questionnaire Responses, Comparing Responses in the Fall to Responses of Teaching and Control Groups at the End of the Project. (Note, Numbers are Percentages of Teachers Responding to Each Question)

	Fall: County Teachers	Spring: Control I (Internal)	Spring: Control II (External)	Spring Design & Pilot
1. Total No. of Teachers Responding	103	9	14	21
2. Did you attend one of the inservices on safety education?				
Yes	NA	89%	0	95%
No		11%	100%	5%

(Continued)

Table 6 - Continued

	Fall: County Teachers	Spring: Control I (Internal)	Spring: Control II (External)	Spring: Design & Pilot
3. Did you include safety education emphasis in classes you taught in the 1981-82 school year?				
	%	%	%	%
Yes	76	89	86	95
No	28	11	14	5
4. Check off areas which you have taught in your regular classes.				
Home	41	78	64	52
Fire	48	67	64	71
Pedestrian	34	56	57	38
Motorcycle	8	11	0	14
Boating	26	33	29	0
Hunting	10	22	0	5
Farm	30	67	71	33
First Aid	31	22	21	19
Driver	14	22	14	5
Snowmobile	12	22	14	19
Camping	18	22	29	5
Water	25	56	43	29
School	46	89	64	62
Bad Weather	22	78	29	52
School Bus	33	67	57	67
Hiking	9	11	0	5
Vocational Hazards	10	0	0	0
Science	18	11	14	10
Vocational	7	0	0	0
Other	NA	11	21	43
Ave. Time:	NA	9.6 hrs.	4.8 hrs.	7.9 hrs.
5. Have you as a teacher worked cooperatively with adults in your community regarding the safety education of children during the school year 1981-82?				
Yes	20	0	14	29
No	80	100	86	71
6. Have you as a teacher spoken specifically to a parent of one of your students regarding a safety concern in the school year 1981-82?				
Yes	19	22	7	33
No	81	78	93	67

(Continued)

Table 6 - Continued

	Fall: County Teachers	Spring: Control I (Internal)	Spring: Control II (External)	Spring: Design & Pilot
7. In the school year 1981-82 did you use audio-visual safety resources from:	%	%	%	%
C.A.M.S.	28	44	50	76
Access	14	0	0	14
Learning Resources Centre	15	0	0	33
National Film Board	17	21	21	24
Other	NA	21	21	24
8. In the school year 1981-82 did you use your school library safety resources?				
Yes	37	56	57	86
No	63	44	43	14
9. In the school year 1981-82 did you use community safety resources?				
Yes	19	33	36	40
No	81	66	64	60
10. The following is a list of safety resource agencies and programs. Please indicate by a check (✓) if you have used any of these resources in the school year 1981-82.				
a Alberta Alcohol and Drug Abuse Commission (AADAC)	17	22	7	0
b Alberta Transportation	34	44	0	43
c Alberta Safety Council	6	0	36	57
d Alberta Education, Field Services Branch	4	0	7	5
e Department of Labour, Fire Prevention Branch	5	22	7	14
f Alberta Recreation and Parks, Recreation Field Consultant	7	0	14	5
g R.C.M.P.	19	0	43	24
h North Eastern Health Unit	27	33	36	43
i Access Alberta	8	11	0	19
j Alberta Energy and Natural Resources, Fish & Wildlife	8	11	29	10
k St. Johns Ambulance	10	0	14	10
l Red Cross Association	15	33	36	57
m Alberta Motor Association	15	22	0	29
n Other (specify)	NA	11	7	10

(Continued)

Table 6 - Continued

	Fall County Teachers	Spring: Control I (Internal)	Spring: Control II (External)	Spring: Design & Pilot
11. It is important to teach safety at school? (Mean scores 5 = Strongly Agree)	Questions Not Asked of Fall Group	4.22	4.64	4.52
12. I will spend more time teaching safety in 1982-83 than I did this year		3.44	3.93	3.90
13. Parents have primary responsibility for safety education.		3.89	4.00	4.19
14. Has St. Paul County's involvement with the Safety Education Project affected your teaching in any way this year?				
Yes		44%	21%	81%
No		56%	79%	19%

Relatively few teachers have worked cooperatively with other adults in the community concerning safety education. This percentage is highest, however, in the design and pilot group who indicated that nurse, pharmacist and school bus driver were involved. Pilot and design teachers were also more likely to have spoken to a parent regarding a safety concern than the other groups.

Use of safety resources such as A-V materials, and school library and community resources was also reported most often by design and pilot teachers, likely as a result of their field testing of the unit. Resource use in the two control groups was approximately equal.

The safety resource agencies used most consistently by teachers in all groups were the North Eastern Health Unit and the Red Cross Association. Alberta Transportation and the Alberta Motor Association were also referred to by St. Paul teachers, but not by the external control group. The Alberta Safety Council was referred to fairly often by the pilot/design groups and by the external control but rarely by the other two.

The last four questions were not included in the Fall questionnaire, so responses are available only for three groups. (Each was answered on a 5-point rating scale. Note that scores have been reversed for ease of interpretation, so that a high score means strongly agree.) It is interesting to note that the external control teachers scores highest on the two questions concerning the importance of teaching safety at school and spending more time teaching it next year.

It is difficult to summarize the results of this questionnaire. Direct comparisons between Spring and Fall responses are difficult because the Fall group included both elementary and secondary teachers. Their differences may reflect either increasing safety emphasis in the county or a difference in teaching styles between the different grade levels. Differences between the groups tested in the Spring tend to be small, although the design/pilot teachers generally report more safety involvement that the other groups.

D. Summary of Teacher Interview Responses

To elicit in-depth quantitative information about the project, one-to-one, semi-structured interviews were conducted with all of the design and pilot teachers as well as with a sample of elementary control teachers, high school teachers, and principals. Interview questions were slightly different for the elementary and secondary groups, but responses will be combined where possible for ease of presentation.

1. How much contact have you had with the Safety Project? (Secondary teachers only.)

Generally, secondary teachers reported little contact with the Safety Project. Some had attended the Fall inservice, and others had had information from steering committee members, but overall they reported little knowledge about the unit design phase of the project.

2. What was your reaction to the original implementation of the project in St. Paul?

There was a widespread feeling among teachers that the safety project was initiated without enough communication with the school staffs. Teachers were not given enough notice about the inservice in the Fall, and were very unclear as to its purpose. There was no clear sense of what was expected or why they should be doing it.

The formation of the steering committee and subsequent reshaping of the project into its final form helped to dissipate the negative feelings somewhat, but again many teachers found themselves pressed into giving time and energy to a project they did not understand. Once unit design was begun, and goals became more concrete, most teachers became more positive toward the project, but it was an uphill road. The time pressures of field testing and evaluation were also a problem for many teachers.

3. What was your reaction to the role of the project staff?

In general, control teachers and high school teachers did not have enough contact with staff to respond to this question. Some would have liked more information prior to the inservice and some commented on the inservice organization, but generally there was no reaction.

The design and pilot teachers were somewhat split in their reactions. Approximately one third would have liked staff to be more directive in terms of defining topics and goals, and in helping in the unit development process. Another third felt that the coordinator had been very helpful in pulling the materials together and facilitating the design process.

Many teachers felt the coordinator was walking a fine line between the expectations of sponsoring agencies and the abilities and desires of the county teachers implementing the project. Steering committee members in particular commended the coordinators' flexibility in the final reshaping of the project.

4. Do you agree with the decision to plan safety units only for the elementary level?

There was unanimous agreement among teachers that the program should begin at the elementary level. Reasons given centered around the greater malleability of younger students, and the greater influence of teachers at this level. Also, in the very young students, it was hoped that attitudes could be shaped at the beginning, rather than having to change them later.

In spite of this general agreement with starting at the elementary level, there was also a need seen for programs at the secondary level, by both elementary and secondary teachers. The most common concern was the need for driver education at the upper levels.

5. Should the project be extended into the secondary level? Is there a need for new safety units at the secondary level? (Secondary teachers only.)

Generally, teachers who taught "paper and pencil" subjects such as math and language felt that there was no time in an already crowded course for safety units. However, those teaching subjects such as science, physical education, and industrial arts saw the need for additional safety information, material and inservice. Only a few would commit themselves, however, to the time necessary to develop new units.

6. Do you agree with the decision to concentrate on attitude as well as knowledge?

Again, there was virtually unanimous agreement that units must address the issue of attitude change from all groups of teachers. There was also a strong feeling, however, that changing attitudes is a difficult task, that change could not be expected in a short time period, and that changing attitudes is extremely difficult. (This feeling was expressed most strongly by the design and pilot teachers who had seen the evaluation results!)

A few teachers stressed the necessity of home involvement in attitude change, since school exerts only part of the influence on attitude formation. Also, one teacher felt that the important change was in behaviour, rather than attitude, and advocated a behavioural program to effect this change.

7. Do you agree with the decision to integrate safety education into a variety of subject areas?

There was less consensus in this area than for Questions 5 and 6. In fact, only half of the teachers trying out the unit actually did integrate it into a number of subject areas. The others borrowed time from another subject but taught the safety unit as a separate whole. Many of these teachers would have integrated the unit if there had been time or if their teaching schedule had been different, but others prefer to teach safety as a distinct, separate unit or course of instruction.

Some of the reaction to integration depended on the topic area. For example, electrical safety fits naturally with grade 4 science, whereas recreational vehicle safety does not fit neatly into any of the present curriculum.

8. Did you notice any effect from the Safety Project on your own teaching?

Approximately a quarter of the teachers interviewed felt that they had become more aware of safety, with many indicating that they emphasized it more, or spent more time on it. The majority of teachers felt that they had always been safety conscious, and that involvement in the project had not increased this. Two teachers reported being more aware of attitudes generally, spending more time discussing them in other contexts.

9. If we could start this year over, what changes would you recommend?

There was a great deal of diversity in answers to this question. Some did not suggest any changes. Those who did recommend changes concentrated on two general themes:

a) getting the teachers more involved in planning at the beginning, so that grass roots support is developed, and teachers do not feel imposed upon; and
b) organizing the program so that the time pressures at the end were reduced.

Also, some teachers would have liked more government support, particularly from the Curriculum Branch of the Department of Education. There was some feeling expressed that if this was important, experts should be doing it; although other teachers felt that the units that can most easily be used are those designed by those currently in the situation.

An unexpected benefit was that a number of design teachers expressed enjoyment of the professional contact with other teachers as a chance to broaden their own outlook and skills.

E. Teacher Logs

A different type of information was collected through teachers' logs. Each design and pilot teacher was asked to keep a running record of the time that they spent teaching the safety unit, the location of the lesson, the subject area, and whether the content was dealt with as a lecture, discussion, film, etc. Results are summarized in Table 7. Since the amount of detail in these logs varied considerably from teacher to teacher, these results can be considered to be representative of the program process, but not definitive.

On average, the safety unit instruction took approximately eight hours, with a range of four to 17 hours. The fire and pedestrian units took longest to instruct, with poisons and electrical safety taking the shortest time.

Using the teachers' categorizations of content units, tallies were made of location, subject and format of instruction. Most teaching was done in the classroom, with 12% (overall) in other school locations such as gym and playground. Only 3% was done in non-school settings such as field trips (but this percentage is likely high relative to instruction in other subjects).

There was a great deal of variability in the subject areas in which safety was taught, with the major areas varying greatly by grade and safety topic. It should be noted that some of this represents integrating safety topics into the particular subject being taught, while for others this indicates replacing the subject teaching with the safety unit.

Teaching format also varied from grade to grade, but overall, discussion was the most frequent mode, followed by student projects, A-V presentations (usually films), and lectures.

Table 7

Summary of Teacher Logs by Grade

Grade		K	1	2	3	4	5	6	All Grades
No. of Logs		4	3	3	3	3	3	2	21
Hours of Instruction	Average	4.8	14.1	13.2	7.3	5.1	6.3	7.8	8.2
	Range	4.0-5.6	10.6-16.8	8.0-16.5	7.2-7.5	4.5-6.1	4.3-8.4	5.8-9.9	4.0-16.8
Location	Classroom, Home Study	74%	58%	70%	88%	100%	84%	100%	85%
	School (Not Classroom)	17%	39%	27%	22%	0	14%	0	12%
	Field Trip	9%	3%	3%	0	0	2%	0	3%
Subject Taught In	Health/Guidance	NA	8%	0	46%	0	0	50%	15%
	Language Arts		29%	68%	46%	41%	9%	36%	39%
	Social Studies		49%	11%	0	0	12%	0	16%
	Phys. Ed.		5%	0	0	0	30%	0	6%
	Art/Music		6%	2%	6%	3%	0	0	3%
	Math		0	0	2%	0	0	14%	1%
	Science		3%	16%	0	56%	42%	0	17%
	Drama		0	4%	0	0	7%	0	2%
Teaching Format	Lecture	7%	14%	11%	17%	10%	27%	15%	14%
	Discussion	33%	32%	28%	46%	37%	33%	46%	35%
	Student Project	25%	22%	34%	24%	33%	12%	15%	25%
	Demonstration	6%	7%	8%	5%	8%	10%	12%	7%
	A-V	11%	21%	17%	7%	10%	16%	12%	15%
	Field Trip	8%	2%	1%	0	0	2%	0	2%
	Guest Speaker	4%	2%	0	1%	0	0	0	1%
	Role Play/Drama	4%	1%	1%	0	0	0	0	1%
	Testing	0	1%	0	0	2%	0	0	1%

V. Conclusions

Teachers in the St. Paul Safety Project produced one safety unit for each grade from Kindergarten to grade 6. These units were then field tested over a three week period involving 4 to 17 hours of instruction. Teaching was integrated into a number of subject areas, with more than 50% of the instruction done through discussions and student projects.

To assess student change due to the project, both knowledge and attitude tests were administered to students at the end of the field test. Students in four comparison groups were tested. Two groups received instruction in the unit: the design group (students of teachers who designed the units), and the pilot group (students of teachers not designing the unit, but teaching it). Two control groups were also tested, but did not receive instruction in the unit. One group was selected from the remaining St. Paul teachers, and the other was randomly selected from a neighbouring county (Control I and Control II, respectively).

Results of the knowledge tests show a consistent, significant difference among the groups, with the teaching groups (pilot and design) generally scoring higher than the control groups. This indicates that instruction in the safety units was effective in raising the level of student knowledge in the areas taught. There were few significant differences between design and pilot teachers, indicating that even teachers not designing the unit could use it effectively.

Two safety attitude tests were also designed for use in this study, one for use in grade 1 and the other for use in grades 2 to 6. Results here were less consistent than the knowledge test results, with a significant difference found only in grade 5. Within the county, results from grades 3 to 6 fell in the expected design/pilot, control direction, but differences are small, with much variability within groups.

This lack of difference is difficult to interpret, particularly since the attitude tests were designed specifically for the study, with no prior reliability and validity information. It may be that attitudes were indeed changed, but the test was not powerful enough to detect this. Or the students' attitudes may not have been changed through the program, or may have been changed very little. To help interpret these results, a post-hoc study was conducted, comparing test results of student designated "safe" and "unsafe" by design and pilot teachers. Results of this analysis indicated that there was a consistent difference between safe and unsafe groups in grades 2 to 6 which was either statistically significant, or approached significance. (There was no difference between groups on the grade 1 test.)

The grade 2 to 6 attitude test is, therefore, assessing something which the teachers feel to be included in their subjective definitions of "safe" and "unsafe" attitudes. This finding lends some validity to the test. It does not, however, completely explain the results. Three weeks is a very short time to change an attitude, even of an elementary school child, so change was likely small, at best.

Also, the test is unlikely to be able to pick up these small differences, even though it may be capable of differentiating between the extreme groups. To answer the question of whether this type of instruction can change attitudes, a much larger study needs to be conducted, with the attitude test revised and further validated.

One unexpected finding in both the knowledge and the attitude testing is the consistently high scores of the external control groups. It was felt that the two adjacent counties were similar when the control group was chosen, but their scores quite consistently exceed those of the internal control group, particularly in attitude.

A closer look at the characteristics of the two counties revealed a number of differences. The largest of these is the number of native students. In St. Paul elementary schools, 26% of students are native, while in the adjacent county, only 11% are native. A difference in home values and attitudes between native and non-native students may explain the attitude differences. As well, the external control county was slightly higher than St. Paul on a number of socio-economic indices. They had a slightly higher participation rate, lower unemployment, smaller families and fewer people per dwelling. However, teachers in the adjacent county do not appear to devote more time to teaching safety, nor do they cover more topics. They do rate teaching safety slightly higher than St. Paul teachers, and intent to spend more time teaching safety next year.

Over 85% of teachers in both counties have included safety in their classes, and they tend to cover a wide variety of topics. Topics most frequently covered include school, school bus, home, fire, farm, and pedestrian safety. The indication of time spent in safety instruction is, unfortunately, very poor, since many teachers omitted this item, or included a frequency rather than an overall time. If one can use those who did reply as a representative, the time spent teaching safety appears to be between 5 and 10 hours per year, so the amount of time given to any one topic is usually brief.

To gauge an overall reaction to the St. Paul Safety Project, county teachers were interviewed regarding specifics of the program. They indicated that attitudes must be included as part of safety instruction, even if they are hard to teach, change, or measure. Teachers also agreed that this type of program must be started at the elementary level, then extended upward if possible. Most agreed with an integrated approach, making safety part of life, not an isolated subject. Some, however, like to teach it as a separate entity, giving it time of its own.

One of the major complaints of teachers was the lack of time for completing and testing the units. They had only three weeks to field test the units before the tests had to be given. There is some question, however, whether the units would have been as effective spread over a larger time. The grade 5 design classes did receive some instruction before the units were officially ready for instruction, and this is the only grade in which the pilot group knowledge scores were significantly higher than the design group. It was also, however, the only case in which there was a significant attitude difference between the design group and the pilot and internal control students. Thus, the question of optimal time of instruction remains unclear. Indeed, it may be different for attitude and knowledge change.

To summarize, the safety units were effective in changing student knowledge of safety at all grade levels. In terms of attitude change, the picture is less consistent. The most likely interpretation of the results is felt to be that the short length of the program resulted in a very small amount of change, which the test was not powerful enough to detect.

Clearly, more research is needed to answer the attitude change question. More time may be needed to effect this change, or it may be important to build more specific attitude change techniques into the units.

VI. Recommendations and Implications

1. This instructional model appears to hold promise for increasing knowledge and perhaps changing attitudes. However, further research is needed to increase our understanding of the processes involved. For example, questions remain as to whether safety instruction should be taught separately, or integrated into other subjects.

2. It is recommended that units be further revised by specialists in attitude change to make the attitude component of the units more specific and incorporate additional techniques. For example, the literature review indicated that social learning theory and modelling could be effective techniques.

3. It is recommended that the revised units receive a further field test in a different school system to see if a longer time and/or specific teaching can increase attitude changes.

4. The safety attitude test developed for use in this study appears to be a viable instrument. Further analysis and revision of the test is recommended, particularly since there appears to be a strong need for a test of safety attitudes in related types of research. For instance, a factor analysis could help to validate the scales, and the underlying structure on which they are based. Also, student scores need to be compared to accident rates to assess their relationship to actual behavior.

Project Summary

PROJECT TITLE: An Evaluation of the County of St. Paul #19 Student Safety Education Project

EVALUATION DIRECTOR: Dr. K. Pain

WHERE CARRIED OUT: County of St. Paul #19

STARTING DATE: February 12, 1982

DATE OF COMPLETION: July 16, 1982

AMOUNT OF FINANCING FROM DEPARTMENT OF EDUCATION; $17,840

OTHER FINANCING:	Workers Health, Safety & Compensation:	$3,076
	St. Paul County:	500

PROBLEM AREAS EXAMINED: This study evaluated the effectiveness of a series of teacher-designed safety education units. One unit was designed for each grade from K to 6, to be taught as an integrated part of the current curriculum: Units focussed on both knowledge and attitude change.

DESIGN OF THE PROJECT (METHOD): After teachers had field-tested the units, students were given knowledge tests relevant to unit content and general safety attitude tests. Test results of four different groups were compared: Design classes (teachers designed the safety units and taught them), Pilot classes (teachers taught the safety units but were not involved in design), Internal control classes (randomly selected from St. Paul schools), and External control classes (randomly selected students from an adjacent county). Additional information concerning the project was gathered through teacher questionnaires, interviews and logs.

MAJOR FINDINGS OR OUTCOMES:

a) There was a significant difference in knowledge scores in most grades, with design and pilot scores generally higher than the control groups.

b) There were generally no significant differences in attitude. Within group variance tended to be very high relative to differences between groups.

c) A post-hoc analysis of the grade 2 to 6 attitude test revealed that it did distinguish between students designated "safe" and "unsafe" by teachers.

RECOMMENDATIONS OR IMPLICATIONS:

a) This instructional model appears to hold promise for increasing knowledge and perhaps changing attitudes. However, further research is needed to increase our understanding of the processes involved. For example, questions remain as to whether safety instruction should be taught separately, or integrated into other subjects.

b) It is recommended that units be further revised by specialists in attitude change to make the attitude component of the units more specific and incorporate additional techniques. For example, the literature review indicated that social learning theory and modelling could be effective techniques.

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d) The safety attitude test developed for use in this study appears to be a viable instrument. Further analysis and revision of the test is recommended, particularly since there appears to be a strong need for a test of safety attitudes in related types of research. For instance, a factor analysis could help to validate the scales, and the underlying structure on which they are based. Also, student scores need to be compared to accident rates to assess their relationship to actual behavior.

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Appendix A
Review of the Literature

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I. INTRODUCTION:

In order to design and evaluate innovative safety programs, it is first necessary to examine previous research to determine what has or has not worked in the past. This literature review focuses on programs for school children which were designed to effect some sort of attitude or behavior change. Because of the amount of literature involved, the content covered has been limited to research dealing with 'self-directed' behavior. This includes traffic safety programs, drug education, etc., but excludes 'other-directed' attitudes such as those involved in studies of prejudice. This distinction was made partly to reduce the literature to manageable levels, and also because there appears to be an important qualitative difference between attitudes and behaviors which directly affect personal health and safety and those which affect one's relationships with others.

Also, this literature review includes only studies which have included some formal evaluation of students in the program. This excludes programs which are only descriptive, or which include only teacher impressions since these provide no basis for judgement of success or failure. In spite of this restriction, the general level of methodological and statistical adequacy of the research is very low. Few studies have applied a true experimental design, and rarely is there random assignment to groups, or even adequate description of the equivalence of groups before treatment. Also, assessment instruments are generally designed for a single study, with little reliability or validity information included. Finally, statistical analyses are often limited, with significance tests misused or not used at all. Often comparisons are made on the basis of gain scores, resulting in the incorporation of statistical artifacts.

Articles reviewed here were located through an Eric computer search of files from 1966 to 1981, a manual search of Psychological Abstracts from 1971 - 1981, as well as citations from other studies. Generally, studies are limited to those available in the University of Alberta libraries, although some very salient studies are cited from secondary sources where the original documents are unavailable.

Because the effectiveness of instructional methods may well be a function of subject matter, articles have been grouped by content area, with a summary given in the conclusion. Appendix A provides a brief summary of the articles surveyed, including age groups, duration, testing framework, methodology and results. Articles in the remainder of the paper follow the format: Traffic Safety Programs, Drug Education, Dental Hygiene, Career Education and Assorted Topics.

II. TRAFFIC SAFETY PROGRAMS:

The only area of safety education which appears to have generated a significant body of research is traffic safety. Generally these programs are set up for children below 10 years of age, since this is the time of greatest accident involvement. Objectives for traffic safety programs are based on studies of accident causation, children's behavior, risk data (exposure plus accident rates) or theory (Grayson, 1981). Recently, a complex analysis of the pedestrian's task has been published by Molen, Rothengatter and Vinje (1981). This appears to provide a focus for future training programs and research studies, by specifying elements to be changed. Unfortunately it is too recent to have generated very much research.

Traffic safety studies, like other educational research, tends to suffer from methodological inadequacies. As well, it seems to be conducted predominantly by research institutes in Britain and northern Europe. Publication in foreign language journals and 'in-house' documents makes access difficult. Therefore this section of the review will draw heavily on the excellent review published by Rothengatter (1981) in order to provide as wide a coverage of the area as possible. Where original research articles are unavailable, this will be noted in the Bibliography.

One strong point of the area of traffic safety programs is that they appear to be based, not only on theory, but also on a careful analysis of children's characteristics which affect their pedestrian behavior. For example, research indicates that children have less adequate peripheral vision and ability to localize sound than adults, requiring more head turning for safe street crossing (Sandels, 1970). Research by Pease and Preston (1967) indicates that children as old as 8 years are not entirely certain of relational concepts of right and left, so that models facing the child may instil elements of confusion. The child's lack of height is also a problem necessitating some different crossing procedures than those used by adults. Children also have more difficulty assessing safe crossing intervals (McKelvey, 1978). As well, Sandels (1970) has documented a lack of understanding of street signs and traffic safety terms commonly used as part of educational programs. (For example, many children feel that the 'Playground' sign with the running child implies a need to run quickly across the street in that area.)

A. Context of Instruction

One of the basic factors differentiating various traffic safety programs is the location of the instruction. Programs can be divided into those using:

1. Real street situations with normal traffic.
2. Real street situations with traffic controlled.
3. Semi-real situations (e.g., tracks, traffic gardens).
4. Simulated streets in playground or gym.
5. Classroom instruction.

Several studies indicate that training in realistic situations is most effective for behavioral change, particularly for younger children. Johansson (1967), Saska(1971) and Sandels (1975) all report a greater increase in correct behavior after traffic training in a real situation (#1 or #2 above) or after combined real traffic and traffic garden instruction than in less real situations.

Reading (1973) found that real traffic training improved behavioral skills in children up to 12 years of age. Rothengatter and Brackenhoff-Splinter (1975) found similar behavioral gains for 7 year olds (but no knowledge gains). Heinrich and Langosch (1976) however, found that individual training in a real situation plus classroom instruction was somewhat better than standard classroom instruction for knowledge gains, but not for risk perception.

The use of semi-real situations such as tracks and 'traffic gardens' has appeal in terms of accessibility and safety, however results from these situations are mixed. Colborne (1971) found that instruction in a semi-real situation was better than classroom instruction with a model for 6 year olds, but not for 7 year olds, using a behavioral test in the semi-real situation. A post test 3 months later showed no group differences. Traffic garden training was better than the control in Saska's (1971) study, but no differences were found by Johansson (1967) or by Sandels (1975). Indeed a second study by Sandels (1975) indicated that the traffic garden results were inferior to those of the control group.

A series of studies by Nummenmaa, Syvänen, et al.(1970, 1972, 1975) indicated that traffic garden training plus film instruction resulted in differences in behavioral measures, but not in knowledge or skill measures when compared to a film only group. In contrast, Fisk & Cliffe (1975) found no differences between groups using slides, outdoor practice or a model track, although all were superior to the control.

Simulated street situations such as those taped on a gym floor were investigated by Sandels (1975), who found them somewhat superior to the traffic garden and control groups. However, Johansson (1967) did not find any differences between school yard training and the control. Dueker (1975) found that the classroom simulation program was effective, but less so than either a film simulation or a film modelling desired behavior, particularly in the delayed post test.

In summary, training in real traffic situations appears to be most effective in changing behavior. Semi-real situations such as traffic gardens gives mixed results, but there is little evidence for the effectiveness of simulations unless they are augmented by some other media.

B. Media of Instruction

The classroom is likely the most common context for safety instruction. Since the effectiveness varies with the instructional model and the type of media used, however, classroom instruction cannot be considered as a single entity. Where classroom training is compared with instruction in more realistic situations, the other situations are generally superior (Colborne, 1971; Nummenmaa et al. 1972; Heinrich and Langosch, 1976; Sandels, 1975).

Printed materials are the classical mode of curricular instruction, and are often the least expensive and least complicated means of presentation of information. The "Safety Club" in the U.K. produces a booklet teaching traffic safety. Evaluation by both Firth (1973) and Russam (1975) found that the introduction of the booklet into the family increased the child's knowledge tested on a model track and in a road crossing situation. In the Norweigian Traffic Club, children receive printed materials twice yearly. Schioldborg's (1976) evaluation of the club indicated that members increased knowledge and decreased accident rates relative to non-members, but the observations of actual behavior yielded mixed results. (Note that club members are self-selected, likely providing a strong bias in those results.)

Singh (1980) evaluated the 'Children in Traffic' book series, and found that knowledge was increased.

The post-test scores were also predicted by certain instructional variables such as individual instruction and monitoring (at the infant school level) and corrective feedback and praise (at the upper level). A further indication that the effectiveness of printed materials is mediated by other aspects of instruction is given by Spolander and Dahlstedt (1977). They found that traffic knowledge actually descreased from Grade 4 to Grade 9, as teacher's attitudes toward instructing these topics became increasingly negative.

Another common method of teaching traffic safety involves the use of table-top traffic models. Fisk and Cliffe (1975) found that use of a model increased knowledge relative to a control, but there were no differences between this program and slide or outdoor presentations. Boyle and Gilhoolt (1972) report that model track instruction increased correct behavior, although these results were not statistically tested. Colborne (1971), however, found that model-based instruction did not affect behavior tested in a traffic garden.

Slide presentation of safety information was also tested by Colborne who found that this type of instruction did improve behavior tested in a traffic garden. On the other hand, Nummenmaa and Syvanen (1970) and Nummenmaa et al.(1972) found that while the use of slides increased knowledge in 5 to 7 year olds, they did not affect behavior.

Films have also been used in traffic education, with the advantages relative to printed materials and slides, that they can clearly present sequences of events. Extensive studies by Nummenmaa and his colleagues (op.cit.) indicated that films were more effective than slides in increasing knowledge, and also that they were most effective presented at repeated intervals, rather than massed into a single session. Quane et al. (1979) found significant differences in children's knowledge after a film, regardless of the nature of teacher training. McKelvey (1978) found that films with feedback were an effective means of training children in Grades 1 to 4 to judge traffic intervals. After Grade 4, this effect levelled off.

Films appear to be more effective if realistic. McGarvie et al. (1980) interviewed children from 6 to 10 years of age after they had seen a training film, and found that only 58% realized that the film (with several animal characters) was attempting to teach the Green Cross Code. Dueker (1975) found that a film using an attractive model and social learning principles was more effective than a demonstration in the outdoor situation (although the effect of the film here is confounded by person and situation variables). Pease and Preston (1967) also point out the necessity of applying correct modelling principles. They found that a film using a model facing the audience actually resulted in a decrease in the use of relational direction (left-right) concepts.

In an interesting study using modern technology, Valavuo (1967) took video-tapes of children's own behavior. These video tapes, combined with verbal instructions, were superior to a purely verbal instruction groups when behavior was tested, although there was no difference in knowledge. In summary, evidence concerning the effects of different media presentations in classroom instruction is mixed. Rarely is the effect of media type explicitly tested and results are generally confounded by other variables. It appears that printed material, model tracks, slides, films and video-tapes can all be used effectively in some situations, particularly in increasing knowledge. Repeated presentations may be better than massed ones, and application of appropriate modelling principles seems to improve results.

C. Summary

As a final summary of research on children's traffic programs, three general hypotheses appear tenable, although adequate tests are clearly lacking. These hypotheses are:

a) Training in realistic situations is more likely to affect behavior than training in more abstract situations, particularly for younger children.

b) Use of different media may facilitate training, particularly when based on social-learning principles, and given as repeated rather than massed presentations.

c) There appears to be a difference in techniques which improve behavior and those which affect knowledge. (Attitude has not been considered in traffic programs reviewed here, although it seems salient in encouraging children to use techniques once they have been learned.)

III. DRUG EDUCATION:

Prevention of adolescent drug use is the subject area which has generated by far the most research regarding attitude and behavior change. Because of the increasing abuse of drugs, particularly among young people, much effort has focused on educational programs designed to prevent or reduce drug use. Unfortunately, the majority of these programs were either not evaluated, or were evaluated using extremely weak methodologies and analyses. Only those programs presenting some concrete data concerning results will be presented here, but it must be noted that the majority of the studies present weak evidence for success or failure of the program. A further problem is that the programs often do not distinguish between legal and illegal drugs, so that results are difficult to interpret.

Programs differ on a variety of dimensions, including format, leadership, size and duration. They are also aimed at different grade levels. Some focus on drug facts, some on attitudes toward drugs, and others on personal skills required to make drug related decisions. Research will be broken down and presented using some of these dimensions, with emphasis on program formats. The attempt is to draw common threads from the very different studies in the area.

A. Program Format

In the field of drug education, one of the most salient problems is finding an appropriate format. What type of program results in the most attitude, behavior or knowledge change? Lectures, discussions, role playing or films? And is it better to have peer leaders, ex-addicts, experts or teachers conduct the sessions?

Only three studies have specifically compared different formats. Swisher and Warner (1971) randomly assigned Grade 9 students to one of four different groups: a behavioral counselling group emphasizing values, attitudes, and alternatives to drug use; a cognitive dissonance group; a placebo counselling group which engaged in 'non-judgemental discussion'; and a regular health unit group. Although the behavioral counselling group resulted in the most attitude change, and there was a significant overall difference among groups, there were no post-hoc differences found between any 2 groups. In another study by Swisher et al.

(1972), four different courses were again compared, this time using Grade 9 and 11 students. The formats involved were: a traditional health unit; relational counselling with free discussion among group members; and two reinforcement counselling groups, one with a non-abusing model, and one with an ex-abusing model. Results from this study indicated that all programs were effective in producing knowledge gains, but that none produced attitude or behavior changes. A weaker study by Virgilio (1971) compared a lecture-discussion drug program with the School Health Education Study (SHES) program. Results indicated that the lecture - discussion program was significantly better at changing attitudes than the SHES program, but that overall gains were very small. (Both programs resulted in knowledge gains.)

Other studies have used only a single format, compared to a non-treatment control, so judgements of relative effectiveness are less direct. A frequently used mode of instruction involves a lecture presentation of facts concerning different aspects of drug abuse. Of the studies testing this type of program, the strongest methodologically is that by Stuart (1974). He compared teacher and student presentations in four information conditions: facts concerning the 'lesser drugs' (alcohol, cigarettes and marijuana); facts concerning the 'major drugs'; a combined program; and a control group. There were no differences between student and teacher presented programs, nor among the three experimental programs. Differences between the experimental and control groups occurred in knowledge about and acceptance of drugs. However, the experimental groups also reported more alcohol, marijuana and LSD use than the control both at post-testing and at follow-ups.

Tennant et al.(1973) also report a lecture-type program in which a physician, lawyer, psychologist and clergyman presented information about drugs to Grade 10, 11 and 12 students on an American army base in Germany. This was followed by a question answering period, and by lab experiences with animals and drugs. The dependent measure here was the number of drug-related hospital admissions from the experimental schools as compared to 12 in the other schools. Unfortunately, there is no information given concerning previous admissions or drug availability in the different areas. Barressi and Gigliotti (1975) had three different expert speakers address groups of students regarding legal, pharmacological, and social-psychological aspects of drug use. They found no group differences in attitude gains, but report some change in those with previously inconsistent attitudes. Similarly, no differences were found between experimental and control groups after a formal lecture by a physician (Morgan and Hayward, 1976). Indeed, these authors report an overall pro-drug shift from pre to post testing for both groups.

Probably the most common drug education format is described as a 'group discussion', although clearly some presentation of information is involved as well. Smart et al.(1976) compared a control group with a peer-led program in which two leaders per class were trained, then led a class discussion with their peers. Topics included drug use, facts, opinions, and attitudes. The authors report significant knowledge gains in the experimental group, but no attitude changes. In fact, drug use increased after the peer-run program. Lewis, Gosset and Phillips (1972) also report increased drug use after a peer-run program. They trained 15% of the students in a high school in a one day seminar, then these students led one day of discussions with the rest of the school. Of the 32 drugs, 2 (including alcohol) showed more gain in the experimental groups than in the control school and 19 showed more gain in the control group.

Even discussions led by 'experts' have led to increased drug use. The California State Program used group discussions led by experts and former users, plus films and pamphlets. They report increased drug use following the program. Tennant et al.(1973) used discussions led by an ex-addict, a physician and a student. Following the program, 23% of the students said that their attitude had changed in a pro-drug direction and 33% felt that the program encouraged illegal drug use. Only 20% felt that the program would decrease use.

In a better designed study, Swisher and Crawford (1971) used psychiatrists in Grades 10 and 11, and psychiatrists, ex-addicts and hospital personnel in Grade 12 to lead large and small group discussion. They report knowledge gains from pre to post, but no significant group differences in knowledge. As well, there were no significant attitude changes nor were there changes in reported marijuana use.

Blaut and Flocco (1971) also used ex-addicts in an education program. They had 15-25 ex-addicts spend a week "rapping" with high school students, along with the provision of a massive supply of pamphlets. At the end of the study, 65% of students said that they had been influenced not to use drugs, and 59% of users said they would stop. In another such study, Morgan and Hayward (1976) report that an informal 'fireside chat' with a physician resulted in no pro-drug shift for the experimental group, while this shift was recorded for the control group.

Several other drug education programs have tried mixed formats, using some combination of lectures, discussions, films, role-playing, etc. Ebel et al. (1975) used films, guest speakers, discussions, debates and lectures in a drug education program for male high school students. They found that attitudes were changed to confirm drug usage, with those who had never used drugs convinced that they were unsafe, and vice versa. Pethel (cited in Randall and Wong, 1976) compared teacher lectures with a student selected program of discussions, films and resource people. He found that both programs resulted in knowledge gains, but that there were no attitude changes, or group differences. Kline (1972) used audio-visual presentations, role playing, lectures and games with junior high students, and found in a post-test that 25% of users said that they would not use drugs again, and that 49% of non-users were convinced not to experiment. (This information is difficult to interpret since no control group, behavioral measures, nor long-term follow-up was used.)

Tennant et al.(1973) used a similar combination of approaches with much younger students (Grades 5 and 6) and found a pre-post difference in both intent to smoke and intent to use illegal drugs, but not in intent to use alcohol nor in attitude toward drugs. Weaver and Tennant (1973) compared an assembly program (presentations by experts plus films) with the assembly program combined with a 3 week course using programmed texts, films, case studies and role playing. Students in the school with the combined program gained more knowledge than those in the other school, but they also reported more drug use after the program. Carifio et al.(1978) used a combined format including lectures, small group discussions, and role playing. Topics were introduced in Grades 4, 5 and 6, then repeated in more depth every 3 years. (i.e., Grades 4, 7 and 10 studied similar content areas.) Only Grades 7 to 12 were tested, and authors report significant gains in both attitude and knowledge, particularly in the younger grades.

Because teaching students about drugs seems to yield mixed results, some authors have turned to teaching students about themselves, giving them skills with which to cope with the drug use decision. One such program is CLASP. This is a peer-planned social learning program designed to keep students from starting to smoke cigarettes. Perry et al.(1980) trained a team of high school students as leaders for small groups of Grade 7 students. These groups rehearsed methods of resistance to smoking pressures, and also tried to get a public commitment from students that they would not smoke. The authors report a significant difference in both self-report of smoking and breath tests between treatment and control groups during Grade 7, with differences starting to disappear in Grade 8.

Warner and Swisher (1973) present information regarding two studies of values clarification. In one, they compared students receiving the Simon values clarification and decision-making training with a control group. They report that the program was most effective with younger groups (Grade 5 and 6), and that it resulted in the development of appropriate values and reduced drug abuse. In the second study, Warner et al.compared four groups: a drug facts group; a values discussion group; a combined values and drug facts groups; and a control. Again they report more attitude change in the values clarification groups. (Note, however that both studies were methodologically weak and scantily reported.)

In a similar vein, Kim (1981) trained classes in self-awareness and group skills and found that this resulted in a small change in 'high risk' attitudes (those statistically associated with drug abuse). Ryan (1974) used class discussions about oneself, class problems, and relationships with peers and adults as a drug abuse prevention measure. He found an increase in group cohesiveness for the experimental group, but no group differences in self-regard.

Briskin (1974) hypothesized that drug use was related to moral development, and compared a published drug education program with a program based on discussion of moral dilemmas revolving around drug use. Both groups gained in knowledge, but there were no differences in communication skills, nor in moral development, nor were there any between group differences.

To summarize the effects of instructional format, many studies report significant knowledge gains and group differences, but few report positive attitude or behavior gains. No one format or combination of formats seems to produce consistent results. In many cases, researchers report an increase in drug use following drug education programs, although this may possibly be an artifact resulting from student's increased willingness to report existing use after a 'sanctioned' drug discussion.

B. Program Duration

One variable of interest is the length of time an educational program must run in order to change attitudes, behavior or knowledge. While some programs reported in the literature were part of a one semester or one year class, others were run on a one shot basis, looking for changes after only one or two meetings with students. To examine the effects of the time variable, research studies were arbitrarily sorted into three categories according to program duration. One group consisted of programs lasting one week or less (the short programs), another was composed of those between one and five weeks in length (mid-length), and 'long term' studies were those 6 weeks or more in duration.

Twelve studies were classified as evaluations of 'long term' programs. Of the 5 studies addressing the issue of knowledge gains, all reported change in knowledge test scores during the course of the program. Stuart (1974) reported a significant difference between gains made by the experimental and control groups after mixed teacher and student presentations. Both Briskin (1974) and Swisher et al.(1972) found that all types of drug education programs examined resulted in roughly equivalent knowledge gains. In poorly described studies, Amendolara (1973) and Carney and Coronado (1971) also report changes in knowledge after their program.

As in the long term studies, all three of the mid-length studies assessing knowledge changes report pre-post gains. (Carifio et al. 1978; Virgilio, 1971; and Weaver and Tennant, 1973.) Virgilio reports no knowledge difference between a lecture-discussion program and the SHES, but Weaver and Tennant did find knowledge differences between a group receiving a formal presentation and one receiving both the formal presentation and a 3 week multi-media course. This is one of the few studies to indicate the superiority of one type of program over another.

Of the short-term studies, only two addressed the issue of knowledge gains and, again, both report significant changes. Swisher and Crawford (1971) found significant pre-post gains after both large and small discussion groups, and Smart et al.(1976) report a significant difference in knowledge gains between experimental and control groups following a peer-run program.

Effects of programs on attitudes are more mixed, partly because the aspect of attitude focused on varies from study to study. Also, since attitude assessment is more complex than knowledge testing, this is an area where differences in methodological sophistication have great impact. In the three long term studies which are methodologically strong, one reports no effect of the program on attitude (Swisher et al. 1972), one reports that the experimental group became more accepting of drugs (Stuart, 1974), and one reports that attitudes tended to change to confirm usage patterns (Ebel et al. 1975). Attitude changes are much more likely to be reported in weaker studies. Five out of six such studies (83%) reported attitude or belief changes, although often differences were small (and sometimes not statistically tested for significance).

Of the mid-length studies, only three looked at attitude changes. Virgilio (1971) reports slight but significant gains after a lecture-discussion program, and Carifio et al (1978) found attitude changes following an alcohol education program, particularly for younger students. (Program ran in Grades 7 - 12.) No attitude change was found by Vogt (1977) in his study of a mixed media program.

None of the short-term studies report attitude changes in an anti-drug direction. The study by Morgan and Hayward (1976) indicates that a group of boys attending a 'fireside chat' did not shift as far in a pro-drug direction as the control group, but this study is very weak.

Studies of behavioral change almost all rely on student reports of behavior. Some authors have students give the number of times they have used a drug in the recent past, while others ask for intended use in the future. The former procedure is open to distortion by a student, and may give the impression of increased use if students simply feel more free to report actual use, however it appears to be the best available assessment of behavior change in most situations. The latter method is generally used in post-test only designs and is open to bias from student mis-presentation and wishful thinking, so results must be treated with much caution.

Of the three long term studies with strong methodologies, Swisher et al. (1972) reports no change in drug related habits, Stuart (1974) reports increased use of some drugs, and only Perry et al (1980) reports decreased use. Perry's study was based on social learning theory and resulted in decreased cigarette smoking, measured both by self-report and through breath analysis. In considerably weaker studies, Warner and Swisher (1973) report reduced drug abuse following values clarification training, and Tennant et al.(1973)report decreased intent to start smoking or use illegal drugs. (No change in intent to use alcohol.)

Of the four mid-length studies examining behavior, only one reports evidence of intent to decrease drug use or experimentation. Kline, 1972, reports that 49% of students attending a mixed format program had decided not to experiment with drugs. Two studies actually report increased drug use after education programs (Carney and Coronado, 1971; Weaver and Tennant, 1973). Tennant et al. (1973) report that 33% of students felt that mixed presentation-discussion programs encouraged drug use.

Of the short-term programs, two report positive changes. Blaut and Flocco (1971) found that 59% of users said they would stop using drugs after ex-addict 'rap' sessions, and 65% were influenced not to use drugs. Also Tennant et al.(1973) reported fewer drug-related hospital admissions for the experimental school compared to the control (perhaps indicating a safer use of drugs rather than a reduction). In a very weak study, Lewis et al.(1972) found that drug use increased in more categories in the control school than in the experimental school. On the other hand, Swisher and Crawford, 1971 found that there were no significant differences in marijuana use following a one day program, and Smart et al.(1976) reported an increase in drug use following a peer-run program, in spite of knowledge changes.

To summarize: all studies looking at knowledge gains during drug education programs report pre-post gains regardless of program duration. Significant differences are also generally found between experimental groups and no treatment controls. Only one study, however, found differences between different types of educational programs. When looking at attitude change, it appears that short-term programs are not at all effective. Even with mid-length and long-term programs, documented change is rare, particularly in strong studies. Where it does occur it is almost as likely to be in a pro-drug as an anti-drug direction. The same is true of behavior changes: Drug education programs appear to be almost as likely to increase use as to decrease it. This is particularly true when students are reporting on actual as opposed to intended use. This finding is common to studies of all durations.

C. Summary

In spite of the vast amounts of time, energy and money devoted to drug education, there appears to be little definitive information as to the "best" way of solving the problem. Indeed, it appears that the more sophisticated the design and analysis of the program evaluation, the more likely one is to find no changes or changes in a pro-drug direction. Part of the problem appears to be that by addressing the topic, particularly on a facts-only basis, leaders may inadvertently be arousing interest and may be seen as implicitly condoning drug use. Also, where peer leaders are used, there seems to be more tendency for programs to result in no change or increased use, except when social learning principles were explicitly applied.

While knowledge changes appear to be relatively easy to bring about and to document, attitude and behavior results are much more mixed. Attitude changes were never documented after short-term (one or two session) programs, so it appears that a longer program is a minimum pre-requisite for this type of change. Effects of program duration on behavioral changes are less clear, with some studies in each category reporting positive and negative changes.

From this analysis of drug education programs, a number of hypotheses emerge:

a) To change drug related attitudes, a program must last more than one or two days, although a very long term program may not be necessary.

b) Knowledge gains can result from very short term programs and seem to be roughly the same with most types of teaching formats.

c) Very mixed results occur with instruction in different formats, and much more research is needed to determine the most effective approaches. Indeed, individual differences of students may need to be taken into account before progress can be made.

d) Teaching students decision-making skills and helping them clarify values may be developed into an effective drug education program.

IV. DENTAL HYGIENE:

Unlike other context areas, dental hygiene studies are generally set up to explicitly test a psychological theory. Even since Janis and Feshbach's (1953) original work on the effects of fear arousal and behavior change, dental hygiene has frequently been used as a context for studying the effects of different types of persuasive communications. As a result of this theoretical interest, research in this area is generally much better planned and executed than for other topics. Another methodological advantage is the recent development of disclosing tablets which provide a reliable, independent check on reported tooth brushing behavior.

In their original study, Janis and Feshbach (1953), tested the effects of different levels of fear arousal on reported tooth brushing behavior. They concluded that a moderate level of fear arousal is more effective than high or low fear in inducing behavior change. The curvilanear hypothesis was also studied by Ramirez and Lasater, (1976). However, unlike Janis and Feshbach, they found no effect of fear arousal level on behavior, although the high fear group was most likely to believe in the direct consequences of brushing.

Evans et al.(1970) added a positive communication element to their design, comparing this with high and low fear levels. They found that the positive appeal group had the highest level of information retention, but that the high fear group expressed the highest intention to have good hygiene, and had the most difference in behavior scores. In a later study, Evans et al.(1975) found no differences between positive and fear appeal groups. Interestingly, however, they did find continued improvement over time, with each following visit and its built-in feedback to students. The authors suggest that this continued feedback may be a key element in long-term behavior change.

In summary, studies in dental hygiene training provide no clear-cut evidence of the effects of fear arousal. One problem is that 'high' and 'low' fear are relational terms applicable only in a particular context and not across different studies.

One interesting hypothesis emerging out of the area is that continuing, brief contacts with feedback may be effective in changing health related behavior.

V. CAREER EDUCATION:

Vocational or career education is another common type of educational program which attempts to change students'attitude and/or behavior. These programs are sometimes aimed at general knowledge but more often were designed to alter conceptions of vocational education or sex-typed employment possibilities.

A general awareness program was reported by Arnold et al.(1978). They had rural students in Grades 3, 6 and 10 explore career choices through library research and 'shadowing' experiences (i.e., spending a day at work with someone in a particular job). No control group was included but authors report pre-post increases in career maturation at each grade level.

Two studies attempted to increase the status of vocational education, encouraging more students to take technical training. Luker and Abernathy (1973) tried to change teachers' attitudes through seminars and summer school training. They then tested students' attitudes and knowledge after being taught by these or control teachers. A significant effect of teacher training was found in students' understanding of the world of work. Also, the effect of the program on attitudes approached significance ($p < .10$) and there was some effect on the realism of goals. A more direct approach was taken by Warren and Finch (1974). They selected students from the top 2 academic quartiles (students who often do not even consider vocational education) and sent them to a summer training institute which consisted of a four week trial of different vocational programs. For boys, there was a significant difference between experimental and control groups on the vocational scale of the Strong Inventory. Also 14% of the experimental group enrolled in technical programs after high school versus only 5% of the control.

Lynch (1979) focused on the entry of girls into vocational programs. This program was regional in scope, involving a student curriculum, job shadowing, and parent and employer workshops. In a survey of attitudes following the program, they found that blue collar careers were still stereotyped as traditionally male or female, but that there was less stereotyping of professional careers. Girls tended to be less traditional in attitude than boys.

Other programs have tried to broaden girls' range of occupational goals. Schau and Kahn (1978) had children in Grades 1 to 5 read a series of four stories portraying persons working at occupations more commonly done by the opposite sex. They found that attitudes changed for the occupation covered in the stories, but that there was no generalization to other occupations. The attitude change was greatest for those receiving more instruction.

In summary, all of the programs dealing with vocational goals report at least some change, in attitudes and/or knowledge, although this often seems to be limited in size or scope. The one study with a behavioral measure does report a difference in choice of technical occupation, although this change is small, and somewhat poorly documented.

VI. ASSORTED TOPICS:

Educators have attempted to change attitudes and behaviors in many areas in addition to the topics discussed above. Included in this last section are a few studies covering a variety of topics.

Ellis (1973) reported on a program which attempted to improve student's attitudes toward the police by assigning an officer to schools in a particular area. This officer participated in school activities, and was a 'friendly presence' in the schools. Unfortunately, the program was begun 5 months before the pre-test, diluting possible pre-post changes. Compared to neighboring schools, students in the study schools were already more favorable to police on the pretest, but it is impossible to say whether or not this was a result of the program. Generally attitudes toward the police improved in the experimental schools, but some questions indicated a decline in attitude.

Richett and Towns (1980) studied education for parenthood programs for Grade 8 students. After a unit consisting of information presentations, discussions, observations, guest speakers and role playing, students became less authoritorian on a Family Idealogy scale than a similar group in a regular health class.

Selby and Lewko (1976) looked at the effects of a YMCA sports program on attitudes toward women in sports. Even before the program, they found that girls generally held a more favorable attitude toward girls' participation in sports than boys. The sports program itself seemed to have a differential effect on the two sexes, with girls who participated having more positive attitudes than non-participant girls, while participating boys held less favorable attitudes toward girls in sport than non-participating boys.

Staelin (1978) studied the effect of consumer education on consumer product safety behavior. He set up a course for Grade 11 students involving films, games, lectures and examination of products. In an attempt to make the course salient to girls, a female instructor was used, there were female models in films, and household products were examined. Results indicated that the experimental groups gained more knowledge than the control, and that girls gained more than boys. There was also a positive effect of practical experience with products, while theoretical knowledge yielded a negative effect.

In a different context, Bullen (1970) had volunteers visit classrooms in Grades 1 - 5. They worked with small groups of children, reading to them, taking them to the library, and giving them books as gifts. The control class also contained the set of books used, but there was no program associated with them. Significant differences were found between the reading attitudes of the experimental and control groups at each grade level. As well, the experimental group tended to rate reading as a somewhat more preferred activity than the control.

The final study to be reviewed concerns the evaluation of a sex education program for Grade 12 students. Unfortunately, there is little information about the program itself, but Philliber and Gutterman (1980) used an interesting method of evaluation. They devised a game in which sexual intercourse with different types of contraceptives involved different risk factors for pregnancy. The game also incorporated information about the students' value orientation, and had different costs and benefits for boys and girls. Using this game assessment, they found that those in the sex-education course were more likely to choose to use contraceptives and more likely to choose effective types. When asked how closely game choices matched real life decisions, 72% of the students said that they matched fairly closely or very closely.

It is difficult to summarize these studies, since they touch on such different topics. It should be noticed, however that all of these studies did produce some attitude change, and that all were relatively long term programs. Also, most report using a mixed instructional program, drawing as many different educational strategies.

VII. CONCLUSION:

It is extremely difficult to find any consistant trends in this diversity of studies of educational programs. Interpretation of results is often hampered by serious deficiencies in research methodology and statistical analysis. In addition, the elements of the programs used are rarely described in sufficient detail to adequately describe the context of the courses. Looking for evidence as to which type of programs were most effective is also made difficult by the fact that few authors have specifically examined the relative effectiveness of different programs; most simply compare one program to a no-treatment control. Virtually no research has looked at the effect of teacher characteristics nor have any checked for generalizability of program success across instructors.

With these cautions in mind, let us examine answers to the specific questions posed at the beginning of the literature search.

a) What are examples of educational programs aimed at school aged children which have attempted to influence childrens' attitudes and/or behavior?

Since safety education is generally focused on changing attitudes and behaviors affecting the well-being of the self, this literature search was limited to similar types of programs. Other-directed attitudes and behaviors were not included, since they appear to be qualitatively different from the ones covered here. Generally studies aimed at changing this type of attitude and or behavior in school children fell into 4 context areas: Traffic Safety Education, Drug Education, Dental Hygiene and Career Education.

The studies reviewed here have used a large variety of instructional strategies. They have been presented by school personnel, experts in different fields, ex-addicts, and specially trained peers. Media of instruction have included books, pamphlets, slides, films, video-tapes and demonstrations. Some programs have been taught through formal lectures, some in large or small discussion groups. Counselling techniques such as role playing have been used, as have lab demonstrations and games. While most studies have directly addressed the attitude or behavior to be changed, others have attempted to teach underlying skills, such as those in decision-making. A large number of programs, particularly in drug education, use some combination of techniques.

b) What are the characteristics of educational programs aimed at school aged children which have succeeded in influencing children's attitudes and/or behavior?

Again, this is a complex question to answer since most techniques have been shown to be effective in some situations, but ineffective in others. Traffic safety education programs seem to indicate that instruction is most effective in realistic situations, particularly for younger children who may find it difficult to generalize from more abstract training. In both traffic safety and drug education, programs based on social learning principles appear to be more successful than those without this theoretical base, although the number of these studies is small. Program duration may also have an effect in that very short, one or two day programs were never successful in producing attitude change. Thus, some extension across time may be a minimum prerequisite for attitude change.

Effects of manipulating the level of fear arousal in dental hygiene programs is mixed. These studies may indicate, however, that repeated measurement and feedback, may be effective in increasing and continuing behavior change.

c) What are the characteristics of educational programs aimed at school aged children which have failed in influencing children's attitudes and/or behavior?

To a certain extent, this question has been answered by part (b). Indeed, one could say that most types of programs have been shown to be ineffective in some study or other. A disturbing trend is that studies which are methodologically stronger seem to be less likely to report significant results than weaker studies.

A negative finding of some drug education studies is the not infrequent report of increasing drug use following educational programs. No one type of program consistently produces this effect, although it may be somewhat more likely following programs focusing primarily on facts, and those using peer leaders.

d) Is there research evidence indicating that educational programs which have succeeded in producing changes in children's attitudes and/or behavior have had a long term impact on attitudes and/or behavior?

Few studies have addressed the issue of long-term changes. Most give post-tests immediately after the program or a few weeks later. Those which have looked at long-term changes tend to report greatly diminishing gains over time. The number of studies using long-delayed post-tests is so low, that attempting to relate amount of long-term impact to program type is likely to result in misleading impressions.

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Appendix B
Safety Knowledge Tests

KINDERGARTEN SAFETY TEST

ADMINISTRATION INSTRUCTIONS

This test is to be administered to small groups of Kindergarten students - no more than 6 per group. Spend some time at the beginning becoming acquainted with children, putting them at ease.

Pass out picture pages and crayons/pencils. Ask children to put names on line.

Introduce the test by saying:

Today, I am going to ask you some questions about things you do at home. Listen very crefully while I tell you what to do.

First find the number 1. Put your finger on it. Good! (Check to make sure all students have correct place. To be repeated for all questions.)

1. Beside the number 1 there is a bottle of cleaning soap, some medicines and a chocolate bar.

   If you found these on a table at home, which one would be safe to eat? Put an X on it.

2. Now find the number 2......

   Here we have a picture of an apple, a box of sand and some cleaning soap. Put an X on the thing that is a poison.

3. Now find the number 3.......

   In the winter, Tommy Turtle starts his car in the garage before he opens the garage door. Is this good? Put an X on the happy face if this is a safe thing to do, and an X on the sad face if its not safe.

4. Here are three signs. Put an X on the sign that means that something is poisonous. (3 Safety Symbols).

5. Here are some pictures of Peter the Cat. Peter just saw his little brother eat something that he got from under the sink. What should he do?

   In the first picture, Peter is looking in his brother's mouth, in the second one he is telling his mother, and in the last one, he is playing. Put an X on the picture that shows what peter should do when he sees his brother eat something that he got from under the sink.

6. Here are some more signs. Put an X on the sign that means that something can hurt your skin.

7. Now look at the signs beside number 7. Put an X on the one that shouldn't go near the fire.

8. Here are some pictures of places in a house: The cupboard underneath the bathroom sink, a book case, and a cupboard over a washing machine. Which is the safest place to keep house cleaning stuff? Put an X on it.

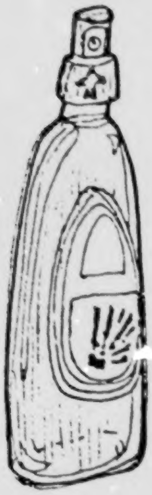
9. Here are pictures of 3 different houses. Which picture shows the safest house? Put an X on it.

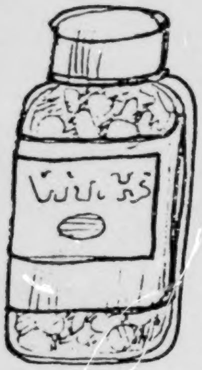
10. Janet told Peter that it is safe to eat anything that grows in the garden. Put an X on the happy face if you think that she is right - that it is safe to eat anything that grows in the garden and an X on the sad face if she is wrong, that it is not safe to eat everything in the garden.

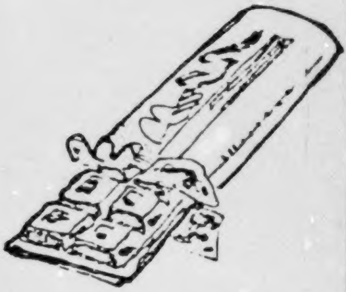
11. Susan found a can under the sink with a sign on it. Should she tell her mother, play with it, or put it back? Put an X on the picture that shows what she should do.

NAME: ____________________

1.







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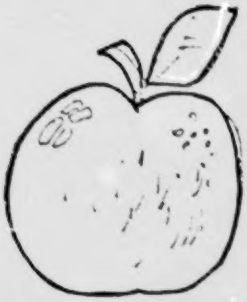

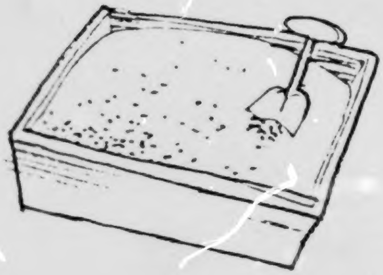

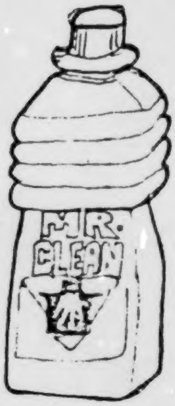

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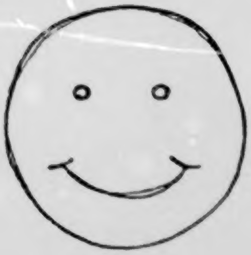

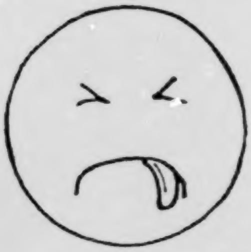

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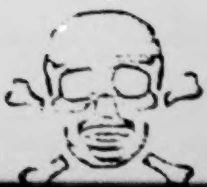

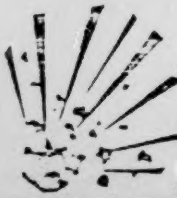

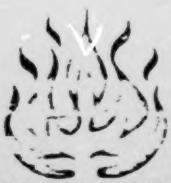

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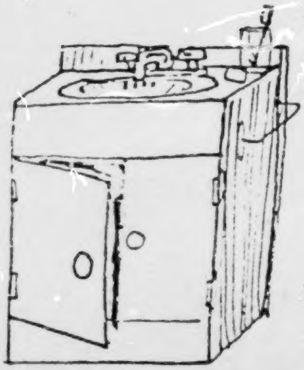

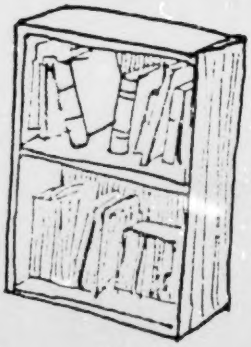

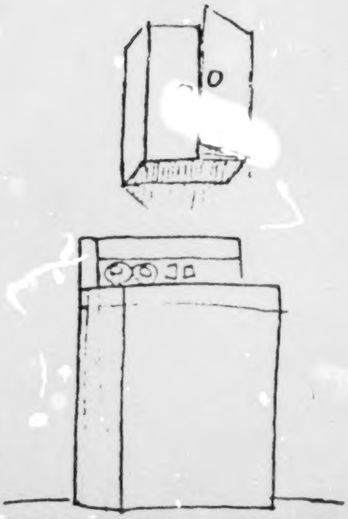

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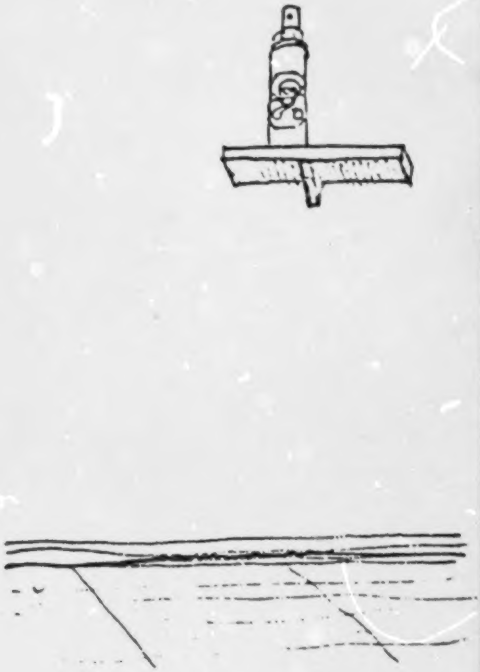


10.

11.

PEDESTRIAN SAFETY TEST

ADMINISTRATION INSTRUCTIONS

Today we want to ask you some questions to see what kids in this grade know about traffic safety. Some of the questions may be pretty hard, just do your best. Answer each question as well as you can.

(Distribute sheets and crayons, make sure each student has a pencil. Now listen carefully, and answer the questions as well as you can. Usually you will put a circle around the answer.

(Read each question out loud, leaving time for students to mark their answers. Questions can be repeated, but do not explain any of the terms. Also, try not to give any hints as to the right answer in your tone of voice when reading.)

1. Put a circle around the sign that says "Cross the road here".

   For the next questions, circle the right answer.

2. You always have to look for cars when you cross the road, even if there are street lights. Circle the Yes or the No.

3. You only need to look left and right before you cross the street. (Circle the right answer).

4. Imagine that you are walking home and it is raining hard. Someone that you don't know offers you a ride. Should you go with them? Yes or No?

5. Penny wanted to cross the street. When the traffic light changed to "Walk", Penny walked quickly across the street. She forgot one important thing. What did she forget?

   There are three answers here. Listen to all of the answers, then put a circle around the right one.

   a) She forgot to look for cars.
   b) She forgot to read the sign.
   c) She forgot to wait for an adult.

6. Two of these people help us to cross the street. Put a circle around their names.

   Policeman   Mailman   School safety patrol

7. Write your telephone number on the line beside number 7.

8. Freddy wants to walk from the school to his house. Find the school. Find his house. This road does not have any sidewalks. Put a line where Freddy should walk.

   There is a safety rule that says "Do not cross the road from between parked cars." How many of you have heard this rule? Think about why this might be

. . . 2

dangerous. Here are some reasons that Terry Turtle gave. You decide if Terry is right or wrong. Put a circle around the check mark if he is right, and a circle around the X mark if he is wrong.

9. Terry Turtle says that you should not cross the road from between parked cars because you might be too big to fit between the cars. (May need to reiterate directions).

10. Terry Turtle says that you should not cross the road from between parked cars because the parked cars might start moving.

11. Terry Turtle says that you should not cross the road between parked cars because you can't see cars coming down the street.

12. Terry Turtle was playing ball on the sidewalk when his ball rolled across the street. He ran after it. Is that what he should have done? Circle the Yes or the No.

Let's pretend that it is winter time for a minute.

In the winter the roads are slippery and we need to be extra careful when we are outside. Terry Turtle is getting ready to go sliding in the park in the snow. Put a circle around the happy face when he does a safe thing, and a circle around the sad face when he does something that is dangerous.

13. Terry pulls his coat hood forward around his head so that only his nose shows.

Is this a safe thing or a dangerous thing? Put a circle around the happy face if this is a safe thing and a circle around the sad face if it is dangerous.

14. Terry puts on his bright red coat instead of his white one.

Is this safe or dangerous?

15. Terry makes sure the cars are stopped before he goes across the street.

Safe or dangerous?

16. When there are no sidewalks, Terry walks on the road. He makes sure he stays on the right side of the road and is going the same way as the cars.

Safe or dangerous?

17. What is the best color to wear when you go out at night? (Put a circle around its name). Red, Black, or white.

18. (Hold up strips of cloth)

This strip is "retro-reflective". What does that mean? Listen to all of the answers, then put a circle around the best one.

19. Which sign means that the people in this house will help you? Put a circle around it.

20. Use the crayons to color these lights the way they are supposed to look.

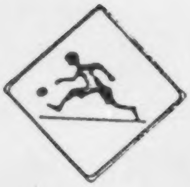
NAME ____________________

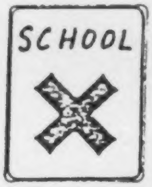
GRADE ____________________

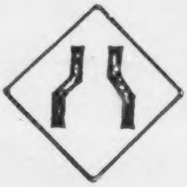
BOY GIRL

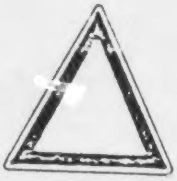
PEDESTRIAN SAFETY TEST

1.









2. Yes No

3. Yes No

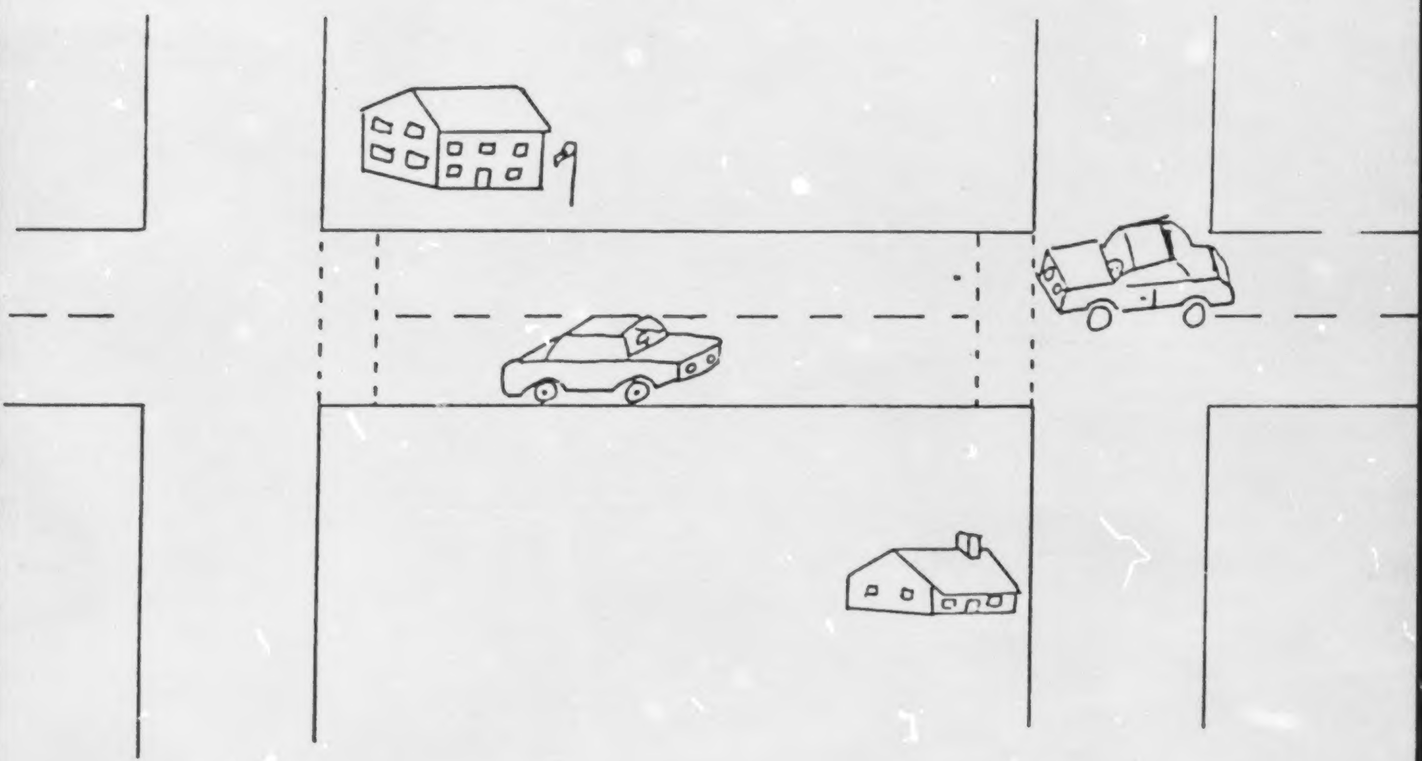
4. Yes No

5. a) She forgot to look for cars
   b) She forgot to read the sign
   c) She forgot to wait for an adult

6. Policeman Mailman School Safety Patrol

7. Phone Number: ____________________

8.



9. ✓ ✗

10. ✓ ✗

11. ✓ ✗

12. Yes No

13.

14.

15.

16.

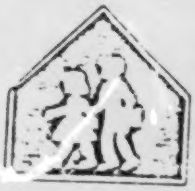
17. RED BLACK WHITE

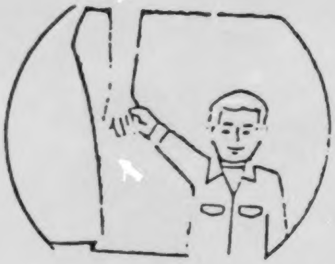
18. A. It is a bright color.

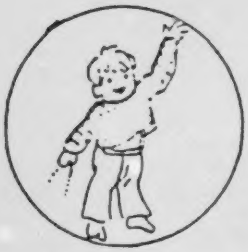
B. It shines when a light hits it.

C. It sticks to cloth.

19.







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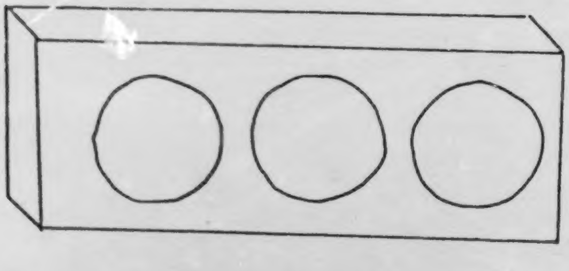


NAME: ____________________

AGE: ____________________

GRADE: ____________________

BOY GIRL

FIRE SAFETY TEST

Here are some questions about fire safety. For each question, chose the best answer. Listen carefully, and look at each answer given, then pick the best one. Put a circle around the letter in front of the right answer.

EXAMPLE:

How many legs does a dog have?

a) 1 leg
b) 2 legs
c) 3 legs
d) 4 legs

---

1. Very young children should:

   a. learn how to light a fire with matches.
   b. never play with matches.

2. When you go to bed you should:

   a. close the bedroom door.
   b. leave the bedroom door open.

3. Smoke from fires:

   a. stays close to the floor.
   b. rises to the ceiling.

4. When you see smoke coming from under a closed door you should:

   a. open the door to see if there is a fire.
   b. feel the closed door to see if it is hot.

5. For minor burns you should:

   a. put cool water on the burn.

6. Smoke detectors should be placed:

   a. in the kitchen over the stove.
   b. outside of the bedrooms.

7. The fabric that burns more easily is.

   a. cotton.
   b. wool.

8. When you are in a smoke-filled house, you should:

   a. hold your breath and run.
   b. crawl low out of the smoke.

9. If you are on the sixth floor of a tall burning building, you should go below by:

   a. using the elevator.
   b. using the stairs.

10. When your clothes are on fire, you should:

    a. drop to the ground and roll.
    b. run to put out the flames.

11. If you see fire fighters fighting a fire, you should:

    a. ask the fire fighters how you can help them.
    b. stay out of the way of the fire fighters.

12. When you call the fire department to report a fire in your home, you should:

    a. say your parents' full name, street address, town, and then hang up.
    b. say your parents' full name, street address, town, and wait to answer questions.

13. If the rest of your family is asleep and you think your home is on fire, the first thing you should do is:

    a. call the fire department.
    b. signal everyone and use your escape plan.

14. Fire will spread more quickly:

    a. in an open room.
    b. in a closed room.

15. When cooking at a stove you should wear:

    a. clothes that fit loosely around arms and body.
    b. clothes that fit tightly around arms and body.

The next question is a matching question. In the first row, there is a list of 5 places to store things. In the second row, there is a list of 4 things that need to be put away. Decide on the safest place to put these things, then put the letter of the place name beside the thing to be stored.

a. Garage

b. High shelf

c. Near the furnace

d. Garbage

e. Cool shelf

16. Matches _____

17. Gasoline _____

18. Paint _____

19. Old Papers _____

20. Fire needs 3 different things to keep burning. Which of these things is not needed for fire to keep burning?

    a. heat

    b. fuel

    c. carbon

    d. oxygen

21. John's father is burning grass off of a small field. It is a calm day and he has lots of water handy. This kind of fire is called:

    a. controlled

    b. uncontrolled

    c. conductive

    d. radiant

22. Fire extinguishers are only important at school. You don't need them in houses.

    a. True

    b. False

23. What is the number to phone when you think that you have seen a fire?

    a. 911

    b. 119

    c. 411

    d. 114

24. Which of these things would catch fire most easily?

    a. metal

    b. gasoline

    c. wool cloth

    d. wood

25. When the school fire alarm rings, you should:

    a. walk quickly to the nearest exit

    b. run out as fast as you can.

    c. go to the office to call the fire department

    d. take all of the valuable things outside

Playground Safety Test

Here are some questions about safety in the playground. For each question, there are 3 or 4 answers given, but only 1 is right. Listen carefully to all of the answers, then choose the one that is best. For questions 1 to 4, put the letter of the right answer on the line beside the question. For the other questions, circle the letter in front of the best answer.

Try this example.

A. How many legs does a dog have?
  a) 1 leg
  b) 2 legs
  c) 3 legs
  d) 4 legs

On the last page there are some pictures of playground equipment. You can tear this page off if you would like. There is a picture of a set of swings, a slide, a teeter-totter and a merry-go-round. Each picture has a letter by it. Now match the pictures with these safety rules. (Each picture goes best with just one rule.) Put the letter of the picture on the line beside the rule.

1. You should never jump off of one of these while your friend is up in the air. _____

2. You must be certain that everyone is holding on to this one before you start it going. _____

3. Don't go too close to this one while someone is using it. _____

4. Don't go head first on this one. _____

5. Johnny wanted to get to the playground on the other side of the school ground, so he ran right through the middle of a baseball game. The older kids told him not to do that because it was dangerous. Why was it dangerous to run through the baseball game?

    a) The other kids might get mad.

    b) He might get hit by a ball.

    c) He was interrupting the game.

    d) The play ground might be busy.

6. A hazard is something that could cause an accident or hurt someone. Which of these things would be a hazard if you had it in your pocket while you were playing?

   a) Pencil

   b) Paper

   c) Marbles

   d) All of these

7. Which of these things would be a hazard lying on the play ground?

   a) Marbles

   b) Paper

   c) Elastic band

   d) All of these

8. You are playing ball on the playground, and your ball rolls across the street. What should you do?

   a) Run and get it as fast as you can.

   b) Get one of your friends to get it with you.

   c) Find a safe place to cross the street, then go get it.

   a) Leave the ball on the street.

9. Teachers tell you not to throw snowballs because:

   a) The snow might turn to ice.

   b) You might hit a teacher.

   c) The snowball could hurt someone.

   d) The snow gets on the sidewalk.

10. What should you do if a dog you don't know comes into the schoolyard?

a) Pat it and make friends.

b) Leave it alone.

c) Chase it away.

d) Throw a ball to it.

1. What should you do if you notice that the swing seat is breaking?

a) Tell a teacher.

b) Warn your friends.

c) Ignore it.

d) Use it carefully.

12. Where is the best place to play baseball?

a) the school grounds

b) the street

c) your front yard

d) an empty lot

13. Which of these should you tell a teacher about?

a) Johnny pushed Jennifer.

b) Jack wouldn't let Fred have the ball.

c) Mary hit George and he fell on his elbow.

d) Frank fell on a nail and he cut his hand.

14. If you were in the playground and this happened, you should always tell an adult.

a) George stubbed his toe on the slide.

b) Frank bumped his head and was dizzy for a minute.

c) Johnny scraped his elbow on the fence.

d) John and Frank started to swear at each other.

15. Your friend falls and cuts her knee when your parents are out. Which of these things should you not do?

    a) Wash it.

    b) Bandage it.

    c) Put disinfectant on it.

    d) Put ice on it.

16. Jane and Mary were playing in the park. Jane dared Mary to climb one of the trees. Mary climbed part way up, then she lost her balance. She fell out of the tree and broke her ankle. Whose fault was it that Mary broke her ankle?

    a) Jane's fault (She dared Mary to do it).

    b) Mary's fault (She tried to climb the tree).

    c) The park caretaker's fault (If he had cut off the low branches, Mary would not have been able to climb the tree).

    d) It was nobody's fault, it was just an accident.

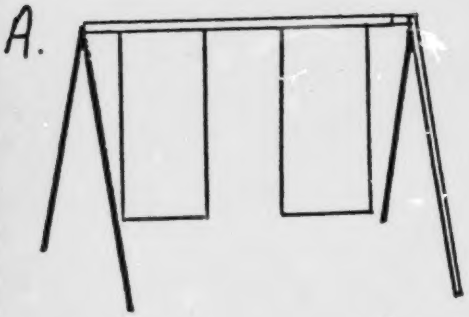
17. The best way to keep the playground safe is to:

    a) Take away all of the things that might cause accidents.

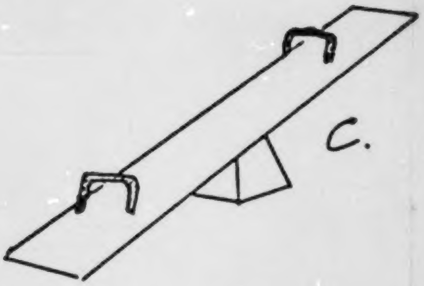
    b) Get kids to think about safe ways to play.

    c) Make sure there are lots of adults to remind kids about safety rules.

    d) Put a fence around the playground.


A.

B.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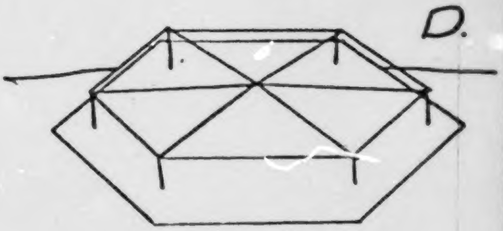

D.

Electrical Safety Test

For each question, chose the best answer. Use your pencil to fill in the correct letter on the blue answer sheets. Make sure that you are filling in the answer for the right question.

Example:
A. How many legs does a dog have? (Do this example question on the exam booklet.)

a) 1
b) 2
c) 3
d) 4

A	B	C	D	E
○	○	○	○	○
○	○	○	○	○
○	○	○	○	○

---

1. Which of these sometimes runs using electricity?

   a) transport truck

   b) lawn mower

   c) snowmobile

   d) bicycle

2. One of these never uses electricity to work. Which one is it?

   a) stove

   b) lamp

   c) radio

   d) candle

3. Electricity helps us by:

   a) giving us light

   b) keeping us warm

   c) making work easier

   d) all of these

4. Where is electricity made?

   a) in the wall socket

   b) in the power wires

   c) in a generator

   d) in a transformer

5. Electricity can be dangerous if it is not used right. Which of these things is not dangerous?

   a) plugging a T.V. and a radio into the same wall socket

   b) using a lamp cord with some of the cover missing

   c) putting a radio beside the bath tub

   d) flying a kite near power wires

6. Electricity:

   a) only travels through wires

   b) always takes the longest path

   c) only travels through metal

   d) always takes the shortest path

7. It is best to use a hairdryer:

   a) in the bath tub

   b) by the bathroom sink

   c) in the bedroom

   d) anywhere there is a mirror

8. Look at the picture on the last page. Will the person in this picture get a shock?

   a) yes

   b) maybe

   c) no

   d) no, if he holds on to the table

9. Which of these children is most likely to get a shock when turning on the basement light?

   a) John is standing in a small pool of water.

   b) Mary is standing on an extension cord.

   c) Harry is standing on a rubber mat.

   d) Susan is standing on a cement floor.

10. Why don't birds get a shock when they sit on electrical wires?

    a) Their bodies are too small to conduct electricity.

    b) The wires are always well insulated.

    c) They don't touch anything else at the same time.

    d) Their bones are too hard to conduct electricity.

11. One of these safety rules was written down wrong. Which one is it?

    a) Electric heaters should never be put near the bath tub.

    b) Never plug a lot of cords into the same wall socket.

    c) Only radios with batteries should be used near the bath tub.

    d) Never put your fingers into a wall socket.

12. Johnny was too little to reach the light switch, so he turned a metal pail upside down to stand on. When he turned on the light, he got a shock. No one else ever got a shock from that switch. Why?

    a) He was standing on a pail.

    b) He was too little to do it right.

    c) He pressed too hard on the switch.

    d) He wasn't wearing a hat.

13. You put a piece of bread in the toaster and it gets stuck. What is the safest thing to do?

    a) Use a long-handled knife to get it out.

    b) Turn the toaster upside down.

    c) Unplug the toaster, then use a fork to get it out.

    d) Get the toast out the fastest way, before it burns.

14. What should you do if you see a lamp cord that is starting to fray?

    a) Leave it alone.

    b) Tell an adult.

    c) Disconnect the circuit breakers.

    d) Put a rug over it.

15. When you want to unplug a lamp, it is best to:

    a) stand far away from the socket and pull on the cord

    b) stand beside the socket and pull on the cord

    c) pull on the plug at the end of the cord

    d) make sure you are wearing gloves

16. Lamp cords are safest when they go under the rug.

    a) True

    b) False

17. Electricity produces heat when it:

    a) goes very fast through wires

    b) goes back and forth in the same wires

    c) goes through water

    d) meets resistance going through wires

18. Which of these things does not belong with the others?
    - a) iron
    - b) heater
    - c) saw
    - d) stove

19. Plugging a lot of cords into one electric socket is dangerous because:
    - a) It might cause a fire.
    - b) It is likely to give someone a shock.
    - c) People may trip over the cords.
    - d) It may blow a fuse.

20. What should you do if you see a broken power line?
    - a) Move the wire.
    - b) Stay there and send someone to phone the power company.
    - c) Use a stick to keep the wire off the ground.
    - d) Ignore it.

21. If your cat climbs up a power pole, you should:
    - a) Climb up and get him down as fast as you can.
    - b) Get your Mom or Dad to climb up and get him.
    - c) Use a ladder to get him.
    - d) Wait for him to come down.

22. It is dangerous to fly a kite near power wires because:

    a) The kite can get tangled so you can't get it down.

    b) The kite string might hurt the wires.

    c) The kite string might bring electricity down to you.

    d) It is on someone else's property.

23. If you are playing in a field when a lightning storm starts, what should you do?

    a) Run under a tree.

    b) Crouch down in the middle of the field.

    c) Crouch down near a metal fence.

    d) Get on your bicycle.

Outdoor Clothing Safety Test

For each question, chose the best answer. Use your pencil to fill in the correct letter on the blue answer sheets. Make sure that you are filling in the answer for the right question.

Example:
A. How many legs does a dog have? (Do the example question in the test booklet.)

a) 1
b) 2
c) 3
d) 4

A	B	C	D	E
○	○	○	○	○

---

1. What happens when you start to feel very cold?

   a) Your teeth chatter.

   b) You shiver.

   c) Your hands have trouble holding things.

   d) All of these.

2. People can die if the get too cold. How does this happen?

   a) They shiver a lot and lose energy.

   b) Their brain freezes.

   c) The inside of their body gets cold.

   d) Their toes and fingers freeze.

3. Use the wind chill graph on the last page to answer questions 3 and 4. You can pull it off if you like.
   If the wind is blowing at 30 kph and it is -20 degrees C., centigrade, what is the wind chill factor?

   a) 1750 watts/sq. meter

   b) 1875 watts/sq. meter

   c) 2075 watts/sq meter

   d) 2250 watts/sq. meter

4. According to the graph, a wind chill of 2125 watts/sq. meter could be described as:

   a) Cold

   b) Very cold

   c) Bitterly cold

   d) Extremely cold

5. Look at the thermometer on the last page with the wind chill graph. What temperature does it give?

   a) 20

   b) 0

   c) -5

   d) -15

6. In the winter, if the sky becomes clear in the late afternoon or evening, what is most likely to happen?

   a) The next day will be sunny.

   b) The next day will be warm.

   c) It will be cold that night.

   d) It will be windy that night.

7. You are outside playing one day, and you notice that your friend's cheek has turned white. What should you do?

   a) Rub his cheek with snow.

   b) Take your friend to the hospital.

   c) Put your hand on his cheek.

   d) Put a hot face cloth on his cheek.

8. Deep frostbite is:

   a) freezing of skin covered with many layers of clothes.

   b) freezing parts of the body below the skin.

   c) skin frozen under ice.

   d) freezing your toes.

9. After your toe has been frozen, you may get blisters on it. What should you do?

    a) Put on a clean bandage.

    b) Put butter on the blisters.

    c) Pop the blisters.

    d) Ignore them.

10. Hypothermia is:

    a) Getting so hot that your body can't cool down.

    b) Loss of body heat faster than you can produce heat.

    c) Loss of energy.

    d) Lowering of temperature inside the arms and legs.

11. Which of these things would not tell you that someone has hypothermia?

    a) Bluish skin

    b) Blurry speech

    c) Wants to sleep

    d) Crying

12. If you think that someone has hypothermia, what should you do first?

    a) Give them an extra coat.

    b) Get them out of the wind.

    c) Rub their arms and legs.

    d) Give them something hot to drink.

13. The wind cools you off fast because:

    a) It sweeps away body warmth.

    b) It takes away moisture.

    c) It goes through your skin.

    d) It makes you shiver.

14. The most important reason for wearing a lot of layers of clothes in the winter is:

    a) You can make sure you don't get too hot.

    b) It is not as expensive as buying one heavy layer.

    c) It gives you lots of pockets to keep things in.

15. Which of these sentences is true?

    a) You don't have to wear warm clothes in the car if you are just going a short distance.

    b) Even if your car breaks down, it stays warm inside.

    c) If your parents aren't wearing hats, you don't need one.

    d) In winter, you should always have a hat and gloves with you.

16. There are a number of things to think about when you are choosing clothes for a ski trip. Which of these things is least important when you are choosing clothes to keep you safe?

    a) Wind-proofing

    b) Clothes that 'breath' (let moisture out)

    c) Color to blend in with the background

    d) Ability to trap air

17. Wool is a good material for sweaters and socks for hiking because:

    a) It comes in many colours.

    b) It dries faster than cotton.

    c) It is more comfortable than acrylic.

    d) It stays warm even when it is wet.

18. If you are cold, which piece of clothing will warm you up best?

    a) a hat

    b) gloves

    c) a scarf

    d) extra socks

19. Why is it important to keep from sweating when you are outside in the winter.

    a) Evaporating water cools you off.

    b) Sweat gives you an odor.

    c) Water stops radiation of heat.

    d) Your body can become dehydrated.

20. How much heat is lost through you head?

    a) 5%

    b) 10%

    c) 20%

    d) 50%

21. Radiation means:

    a) Transfer of heat to a metal.

    b) Transfer of heat to the air.

    c) Turning water into vapor.

    d) Trapping air between layers.

22. It is not a good idea to wear jeans when you are hiking because:

    a) They fit too tightly.

    b) They do not breathe (let moisture out).

    c) They dry too fast.

    d) They are not warm while they are wet.

23. Down clothing can be very warm. The biggest problem with it is that it:

    a) is too light.

    b) doesn't stay warm when wet.

    c) is not very durable.

    d) is not suitable for a dry climate.

24. Goretex is a new material often used by hikers. What is it's biggest advantage?

    a) it is waterproof, but it 'breathes'.

    b) it is both wind and waterproof.

    c) it is not expensive.

    d) It does not get stiff in the cold.

25. You are packing for a ski trip and the forecast is for very cold weather. Which of these things should you leave at home?

    a) Down jacket

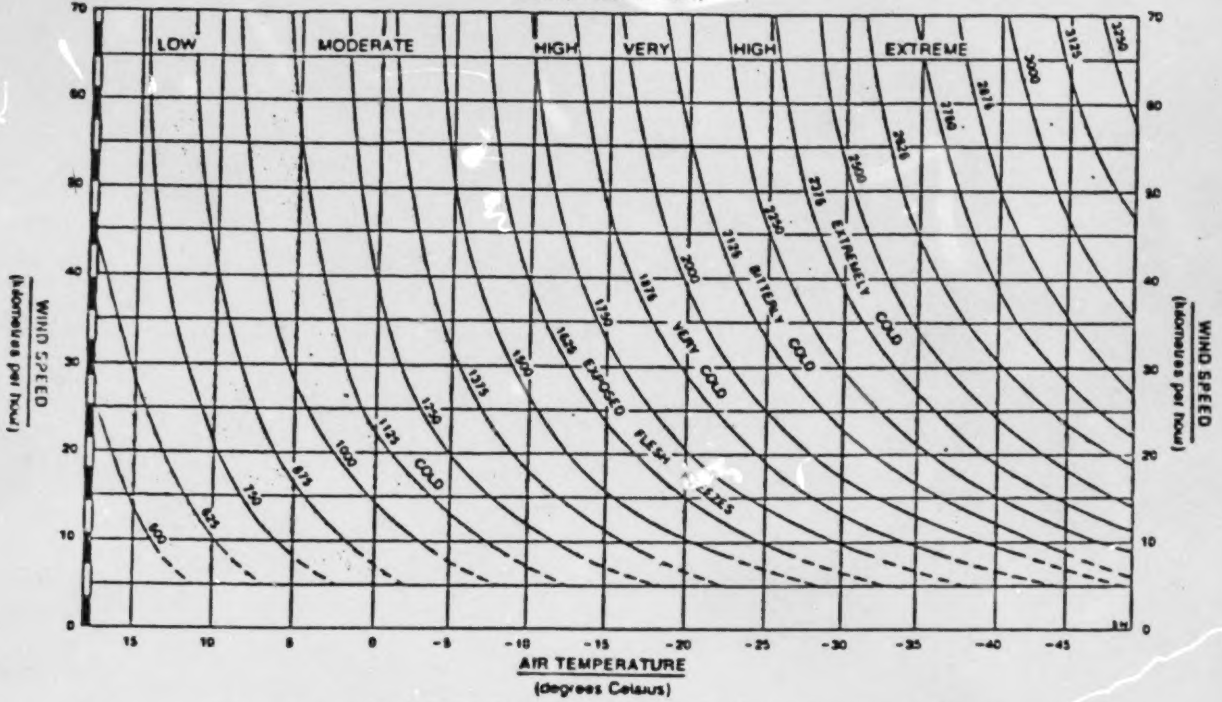
    b) Wool socks

    c) Gloves

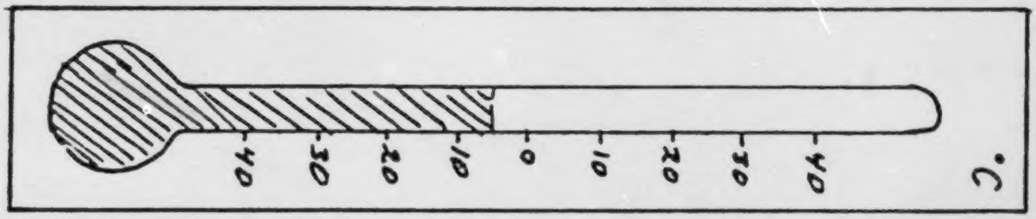
    d) Down mittens

WIND CHILL COOLING RATES

(watts per square metre)



*Information provided by the Atmospheric Environment Service: Environment Canada



Motorcycle Safety Test

For each question, chose the best answer. Use your pencil to fill in the correct letter on the blue answer sheets. Make sure that you are filling in the answer for the right question.

Example:
A. How many legs does a dog have? (Do the example question in the test booklet.)

a) 1
b) 2
c) 3
d) 4

A	B	C	D	E
○	○	○	○	○

On the last page there is a picture of a motorcycle with some letters on it. Use this picture to answer questions 1 to 4. You can tear the page off of the exam if you would like. Fill in the letter from the drawing on the answer sheet.

1. Which letter points to the clutch?
2. Which letter points to the gas tank?
3. Which letter points to the back brake?
4. Which letter points to the throttle?
5. To learn to drive a motorcycle on public roads, you must:
    a) Be 14 years old and have a 'Learner's Permit' (Class 7 license)
    b) Be 16 years old and have a 'Learner's permit'.
    c) Be 16 years old (no license needed).
    d) Have a car driver's license.
6. When on the highway, motorcycle riders must:
    a) Drive slower than cars.
    b) Use headlights, day or night.
    c) Drive on the shoulder of the road.
    d) Drive faster than cars.

7. If two motorcycles are travelling together, it is best to ride:

   a) side by side

   b) one behind the other

   c) either side by side or one behind the other

8. Where should a motorcycle be when driving behind a car?

   a) the left side of the lane

   b) the right side of the lane

   c) directly behind the car

9. Look at the traffic sign below the motorcyle on the last page. What does it mean?

   a) Divider ahead, keep right.

   b) Road turns right.

   c) Yield to oncoming traffic.

   d) No left turns allowed.

10. What is the most common cause of motorcycle accidents?

    a) Poor road conditions.

    b) Motorcycles breaking down.

    c) People making mistakes.

    d) Poor weather conditions.

11. Which of these does not lead to the high accident rate for motorcycles?

    a) Motorcycle lights are not bright enough.

    b) Car drivers do not notice motorcycles.

    c) Riders do not know how to control their motorcycles.

    d) Motorcycle riders think that they are special, and don't need to obey laws.

12. Being a responsible motorcycle rider means:

    a) Planning and thinking ahead.

    b) Being aware.

    c) Thinking about consequences.

    d) All of these.

13. You find someone lying on the ground, unconscious. What should you do first?

    a) Check to make sure he is breathing.

    b) Run for help.

    c) Cover him up.

    d) Give him something warm to drink.

14. If you think that someone has broken his arm, what should you do?

    a) Reset the bone.

    b) Pull the arm to make sure it is straight.

    c) Tie something around the arm so it won't move.

    d) Put ice on the arm.

15. A concussion happens when:

    a) There are a lot of bruises.

    b) A broken bone breaks the skin.

    c) The ears are blocked.

    d) There is a hard blow to the head.

16. If you think someone has broken his back, what should you do?

    a) Carry him immediately to the hospital.

    b) Make sure he lies very still.

    c) Lift his head and put a pillow under it.

    d) Make sure he doesn't go to sleep.

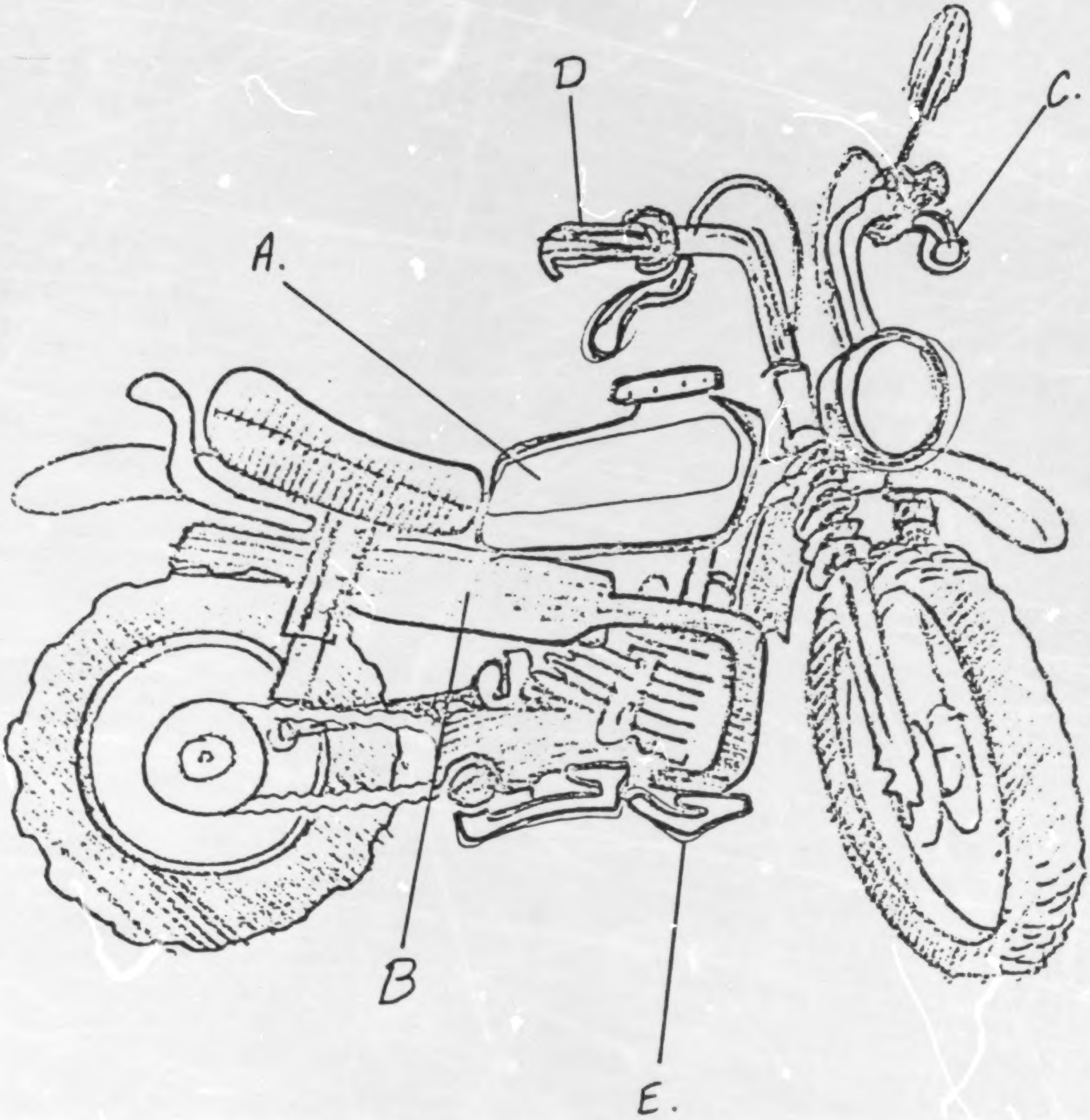
17. The best method of artificial respiration for an adult usually is:

    a) Mouth to mouth

    b) Mouth to nose

    c) Pressure to the front of the chest

    d) Pressure to the back of the chest


D
C.
A.
B
E.

Appendix C
Safety Attitude Tests

GRADE ONE SAFETY ATTITUDE TEST

ADMINISTRATION INSTRUCTIONS

Today, I'm going to read you some stories about a kid called Pat. I want you to listen carefully and try to decide whether you are like Pat or not like Pat. Or perhaps you are sometimes like Pat and sometimes not like Pat. If you think that Pat is like you, you are going to put an X on a circle for LIKE ME. If you think that Pat is not at all like you, you are going to put an X on a square for NOT LIKE ME. If Pat is sometimes like you and sometimes not like you, put an X on a triangle for SOMETIME LIKE ME. You should only have one X on each now.

Show me where you are going to put an X if you decide Pat is "LIKE YOU". Where are you going to put your X if you decide Pat is "NOT LIKE YOU". What will it mean if you put your X in the triangle?

Let's try some examples: Find the row of shapes beside the letter A. Listen carefully. Pat can play the piano. Is that like you, not like you, or sometimes like you? If it is like you, put an X on the circle. If you can't play the piano like Pat, put an X on the square. An X on the tirangle would mean that you can sort of play the piano. (Discuss answers to make sure kids understand the task).

Let's try another one. "Pat thinks that it is fun to play on the swings." Would you put an X on the circle for like you, an X on the triangle for sometimes like you, or an X on the square for never ever like you? (Discuss answers, stay non-judgemental, every answer is good). Try this one. "Pat likes to look at comic books." (Reiterate instructions, check to see that everyone understands. Labels to symbols may need to be repeated for every question until you are absolutely sure that all kids in group understand).

Now let's do the real questions. Remember there are no right or wrong answers to these questions. Just try to be as honest as you can. Don't worry about what other kids are saying. Everybody is different, so everybody's answers are going to be different.

Any questions?

GRADE ONE SAFETY ATTITUDE TEST

1. Whenever Pat rides in the car, he always makes sure that his seat-belt is fastened.

2. Pat has always wanted to jump out of an airplane using a parachute.

3. One day Pat was walking home when she saw a tree. It looked pretty high, but she climbed it anyway. She wanted to show her friends that she could do it.

4. After school, Pat's friends all ran across the street to the playground. Pat knew he should use the crosswalk, so he left his friends and went down to the corner to cross the street.

5. One day, when Pat was playing at the park, she saw a little boy carrying a pointed stick. He was running across the field, waving the stick in the air. Pat went over and asked the little boy to give her the stick so that she could put it into the garbage.

6. Pat and her friends were playing house. Her friends asked her to light a candle for their tea party. Pat knew that she was not supposed to touch the matches, but she didn't want her friends to think that she was scared. Finally she decided to light the candle just for a little while.

7. One day Pat was walking home from school when she started to think about the party they were going to have the next day. Suddenly she realized that she was in the middle of the street. She hadn't remembered to look for cars at all.

8. Pat had been told that he couldn't use the lawn-mower until he was older. But one day when nobody else was around, he decided to try it just for a minute. If nobody saw him, he thought it would be O.K.

9. One day on the way to school, Pat thought that she saw some smoke coming out of the window of a house. She was already late for school, but she called at the next house to tell the neighbors what she had seen.

10. At the lake, some of Pat's friends were going out in a rowboat. Pat said he couldn't go with them until he got a life jacket. His friends tried to get him to come right away, but he made them wait until he got a life jacket.

. . . 2

11. One day, Pat and her class were riding on the bus. They started to talk and tell jokes and move around. Their teacher told them to sit down and be quiet, so Pat did sit down. She was quiet for the rest of the trip.

12. Pat really likes the times when his teacher talks about safety because it teaches him how to play without getting hurt.

13. Pat often goes outside to play in clothes that are not warm enough.

14. Pat sometimes thinks that teachers make up rules just to keep kids from having fun.

15. Someday Pat would like to travel to the jungle to see how monkeys and tigers live.

NAME ____________________

AGE ____________________

EXAMPLES: BOY GIRL

	LIKE ME	SOMETIME LIKE ME	NOT LIKE ME
A.	○	△	□
B.	○	△	□
C.	○	△	□

	LIKE ME	SOMETIME LIKE ME	NOT LIKE ME
1.	○	△	□
2.	○	△	□
3.	○	△	□
4.	○	△	□
5.	○	△	□

	LIKE ME	SOMETIME LIKE ME	NOT LIKE ME
6.	○	△	□
7.	○	△	□
8.	○	△	□
9.	○	△	□
10.	○	△	□

	LIKE ME	SOMETIME LIKE ME	NOT LIKE ME
11.	○	△	□
12.	○	△	□
13.	○	△	□
14.	○	△	□
15.	○	△	□

Grade Two and Three

Safety Attitude Test

Administration Instructions

Introduce the test using these directions.(Note that material in brackets should not be read to students.)

Here are some questions about the things you like to do and the ways you think about themself. There are no right or wrong answers to these questions, we just want to know what boys and girls your age think about these things. Answer each question as honestly as you can. Be sure to say what you are really like; not what you would like to be, or what you think you ought to be.

All of your answers will be private. I won't see any of them. After you are all finished, we will put the papers in this envelope, and send they away.

The first part asks you to say if something is 'Always Like You' or "Never Like You'. Read the sentence, and think about it for a minute. If you are always like that, circle the 1 under 'Always Like Me'. If it is never like you, put a circle around the 5. If it is sometimes like you and sometimes not like you, circle the 3. A circle around the 2 would mean that that was mostly like you, and 4 would mean that is was mostly not like you.

O.K. Let's try some examples. Look at A. on the top of your page. It says 'I am a girl.' Which number would the girls circle? Which number would the boys circle? (Hopefully, all girls should circle the 1 and all boys should circle the 5.)

Now do Example B. 'I have blond hair.' (Discuss answers, using examples from class. Blonds should circle 1, Brown haired kids circle 2, 3 or 4 and Black haired kids circle 5. Perhaps use yourself as an example. Use a lightness/darkness scale for any red-heads.)

Any questions? Lets begin with question 1. (Read the questions aloud, leaving time for students to answer. Questions can be repeated, but do not explain terms. Tell students to answer as well as they can, and note any misunderstandings on your copy of the test. Try to keep students working independently; you may need to stress the fact that everyone is different, so all answers will be different.)

After students have finished the first 17 questions, read the following directions.

The next set of questions is just like the first one, except that you need to say whether you agree or disagree with the sentence.

Let's try Example A. "We should go to school all summer." Putting a circle around the 1 would mean that you would like to go to school all summer. Putting a circle around the 3 would mean that sometimes you would like to go to school in the summer, and sometimes not. A circle around the 5 would mean that you have never wanted to go to school during the summer holidays.

Try Example B. 'Girls and boys should take Phys. Ed. together'. (Discuss answers, clarify if necessary.)

Attitude Scale

Examples:	Always Like Me				Never Like Me
A) I am a girl.	1	2	3	4	5
B. I have blond hair.	1	2	3	4	5
1. I wear a seat belt in the car.	1	2	3	4	5
2. If my friends start playing with something that's not safe, I tell them to stop.	1	2	3	4	5
3. I obey safety rules even if there's no one watching.	1	2	3	4	5
4. If all my friends run across the street, I run too.	1	2	3	4	5
5. When I see a little kid playing with something, I check to make sure that its safe.	1	2	3	4	5
6. If I see broken glass on the playground, I put it in the garbage.	1	2	3	4	5
7. I like to do things that are a little bit scary.	1	2	3	4	5
8. I think about what could happen before I try something new.	1	2	3	4	5

		Always Like Me				Never Like Me
9.	Sometimes I get thinking about things and I forget where I'm going.	1	2	3	4	[✓ 5]
10.	I sometimes do crazy things so that others will watch.	1	2	3	4	[✓ 5]
11.	I would like to go somewhere far away - like the North Pole or Africa.	1	2	3	4	[✓ 5]
12.	I would really like to jump out of an airplane using a parachute.	1	2	3	4	5
13.	I would like to learn to be a ski jumper.	1	2	3	4	5
14.	I would like to learn to fly an airplane.	1	2	3	4	5
15.	I don't like to try new foods that I've never tried before.	1	2	3	4	5
16.	Sometimes I use bad words just to shock somebody.	1	2	3	4	5
17.	I don't like to play games that I might get hurt in.	1	2	3	4	5

Part II.

Examples:	Strongly Agree				Strongly Disagree
A. We should go to school all summer.	1	2	3	4	5
B. Girls and boys should take Phys. Ed. together.	1	2	3	4	5
18. If you have an accident, it is usually your fault.	1	2	3	4	5
19. No matter what happens, doctors can make you well.	1	2	3	4	5
20. The government makes sure that toys can't possibly hurt you.	1	2	3	4	5
21. Even if you are good at a sport, you still need to be careful when you play it.	1	2	3	4	5
22. You have to be very careful crossing the road, even if there are traffic lights.	1	2	3	4	5
23. Its O.K. to break rules as long as nobody gets hurt.	1	2	3	4	5
24. Playgrounds are for kids, so adults should not get to decide on how kids play there.	1	2	3	4	5
25. Safety should be taught at school.	1	2	3	4	5
26. People should have to take water safety lessons before they can use boats.	1	2	3	4	5

		Strongly Agree				Strongly Disagree
27.	Sometimes teachers make up rules just to be bossy.	1	2	3	4	5
28.	If you obeyed all of the safety rules all the time, life would be no fun.	1	2	3	4	5
29.	Kids who have a lot of accidents with bats and balls shouldn't be allowed to play with them.	1	2	3	4	5
30.	Its best to do what the teacher says.	1	2	3	4	5
.	You must never push and shove, even if you are in a hurry.	1	2	3	4	5
32.	Its all right to break safety rules as long as you don't get caught.	1	2	3	4	5
33.	If you have enough money to buy a motorcycle, you should get to ride it, even if you don't have a license.	1	2	3	4	5
34.	You can't let people push you around.	1	2	3	4	5
35.	A smart person stays away from activities that are dangerous.	1	2	3	4	5

Grade Four to Six

Safety Attitude Test

Administration Instructions

Introduce the test using these directions. (Note that material in brackets should not be read to the students.)

Here are some questions about the things you like to do and the ways you think about yourself. There are no right or wrong answers to these questions, we just want to know what kids your age think about these things. Answer each question as honestly as you can. Be sure to say what you are really like; not what you would like to be, or what you think you ought to be.

All of your answers will be private. I won't see any of them. After you are all finished, we will put the papers in this envelope, and send them away.

(Pass out papers, and answer sheets.) You should each have a question booklet an answer sheet, and a fairly dark pencil. All of your answers except for the examples are to be filled in on the blue answer sheets.

The first part asks you to say if something is 'Always Like You' or 'Never Like You'. Read the sentence carefully, and think about it for a minute. If you are always like that, fill in the 1 for 'Always Like Me'. If you are never like that, fill in the 5 on your answer sheets. If the sentence is sometimes like you and sometimes not like you, fill in the 3. Filling in the 2 would mean that that was sometimes like you, and 4 would mean that is was mostly not like you.

O.K. Let's try some examples. Look at A. on the top of your page. It says 'I am a girl.' Which number would the girls fill in? Which number would the boys fill in? (Check to see that all girls circled 1 and all boys circled 5 - hopefully!) Now do Example B. I have blond hair. (Discuss answers, using examples from class. Blonds should circle 1, Brown haired kids circle 2, 3 or 4 and Black haired kids circle 5. Perhaps use yourself as an example. Use a lightness/darkness criterion for any red-heads.)

The rest of the questions are to be answered on the blue answer sheets. You must use a pencil. (Make sure that everyone has a fairly dark pencil.) First fill in your name. Make sure you fill in the appropriate circle under each letter of your name. Then fill in the circles for grade, sex, and birthdate.

O.K. Begin with question 1. Pay careful attention to the question numbers and make sure that you are answering the questions in the right place. Make sure you don't leave any questions out. Stop when you get to Part II. for some more directions. Any questions?

Introduce the second set of questions as follows:

The next set of questions is just like the others, except that you need to say whether you agree or disagree with the sentence. Let's try Example A. We should go to school all summer. Filling in the 1 would mean that you would like to go to school all summer. Filling in the 3 would mean that sometimes you would like to go to school in the summer, and sometimes not. If you filled in the 5, it would mean that you have never wanted to go to school during the summer holidays.

Try Example B. 'Girls and boys should take Phys. Ed. together'. (Discuss answers, clarify if necessary.)

Now finish the questions. You should be starting at Question 18 on your answer sheet.